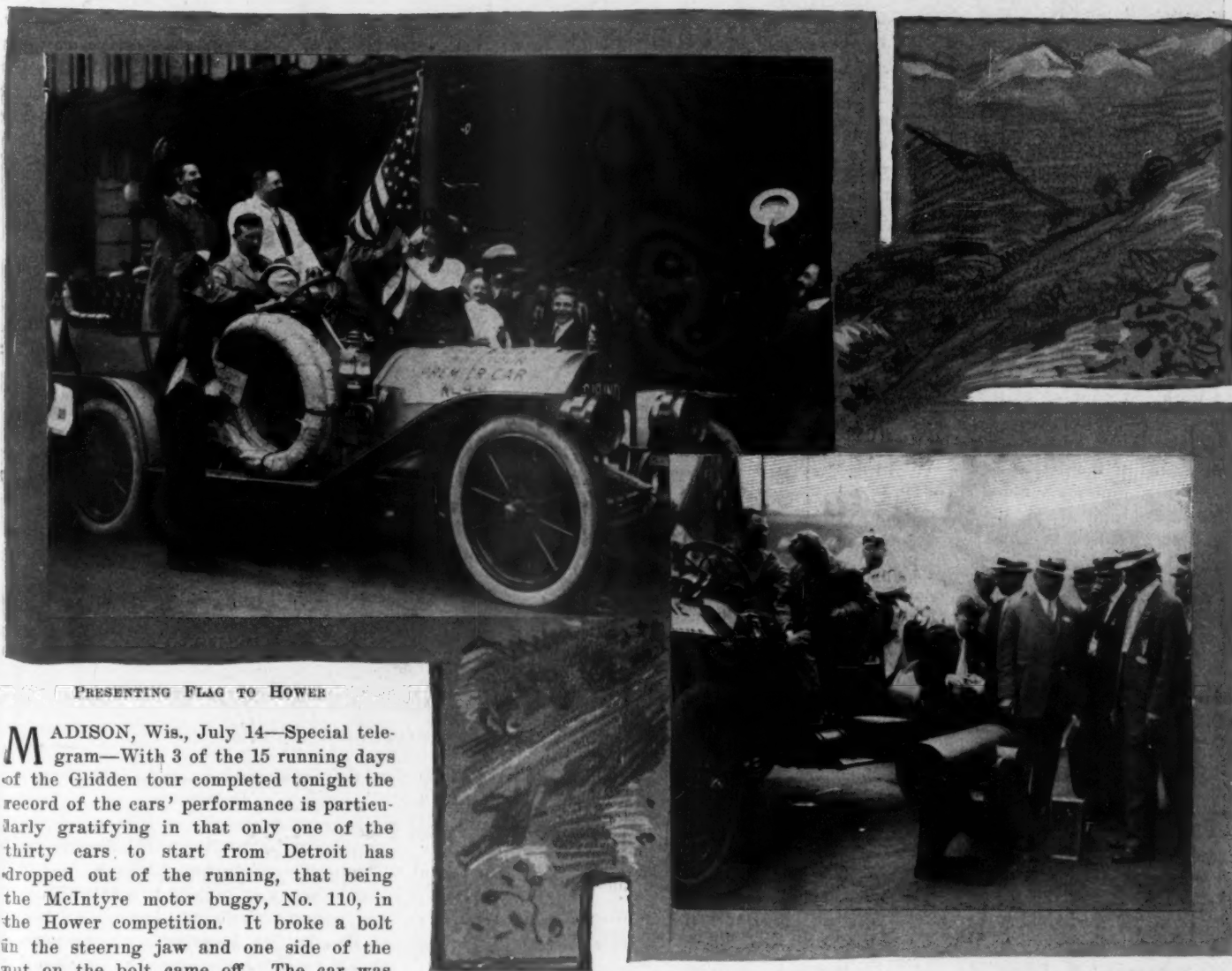


MOTOR AGE

SIXTH GLIDDEN TOUR NOW WELL ON ITS WAY



PRESENTING FLAG TO HOWER

MADISON, Wis., July 14—Special telegram—With 3 of the 15 running days of the Glidden tour completed tonight the record of the cars' performance is particularly gratifying in that only one of the thirty cars to start from Detroit has dropped out of the running, that being the McIntyre motor buggy, No. 110, in the Hower competition. It broke a bolt in the steering jaw and one side of the nut on the bolt came off. The car was ditched today when approaching South Milwaukee and later was officially withdrawn from the contest. Much regret is expressed because of the early retirement of the only motor buggy in the tour, as it was being watched with particular care by many of the tourists who had not expected it to make the schedule, but had counted on it to make the daily runs without mechanical troubles.

Besides the motor buggy only three

DETROIT'S MAYOR AND DETROIT'S CANNON



WASHINGTON PARK, CHICAGO

other cars have suffered penalizations, two being the little Brush runabouts and the third No. 3 Chalmers-Detroit in the Glidden contest. The Chalmers broke a fender iron on the first day and had to stop to repair it yesterday, giving the car a total count of 1.4 points against it.

The No. 103 Brush, driven by D. B. Huss, lost .4 points yesterday for tighten-



BEST WISHES GO WITH THE LITTLE HUPMOBILE

ing a bearing, but otherwise it is clean. The other Brush, No. 104, has not been so fortunate, having burned out a connecting rod bushing the first day and having to repair one the second day. As yet it has not reported today and it may be it has experienced additional trouble. Up to last night it had a total penalty of 186.1.

Good Record So Far

With but four of thirty cars penalized in 3 days of running is a particularly brilliant record considering the treacherous sands of the first 2 days and the stubborn hard holes on today's run between Milwaukee and Madison. But one of the four penalized belongs to the higher-priced machines, and its injury is confined to a fender iron. It has generally happened in previous Glidden tours that a larger number than this would go out on the first 3 days and if they did not actually suffer penalties their cars carried injuries and it was only that the rules did not take cognizance of them that the cars had clean scores.

Perfect Scores Anticipated

So excellently have many—in fact nearly all of the cars—performed that each evening the gossip is now becoming common that several cars will reach Kansas City with perfect scores and that it will be up to the technical examination to rob them of such, and it is largely a matter of speculation if even that, rigid as it may be, will destroy the clean sheets of some of the cars. The drivers are taking much greater care than they did last year.

The start takes place each morning at 7, the cars getting away at 1-minute intervals. The chairman's car leaves 45 minutes in advance of the first car off each day and none of the contesting cars can pass it unless it becomes disabled and gets behind schedule. A commendable feature in this year's rules is that the cars check into the night control immediately upon



VAN DERVOORT IN MOLINE FIRST TO START

arrival, instead of waiting in line to check in at a certain minute, as was done on previous tours. The change allows all of the men to get through with their daily routine from half to 1 hour earlier than heretofore.

The fast traveling of previous years is almost entirely wanting excepting for a few hours on the opening day.

Tour One-Fifth Over

Although by actual days the tour is one-fifth over, or 20 per cent over, yet only 491 of the 2,638.8 miles have been covered, or a little better than 19 per cent. The weather during the 3 days has all been perfect, and only on one spot on the roads today, near Racine, Wis., was there the slightest semblance of recent rains. Had rains fallen they would have proven more benefit than injury to the tourists, due to

the great amount of sand on the roads and the long spell of previously dry weather.

In addition to the thirty contesting cars are eleven non-contending machines, six of which are press cars, four official machines and one extra, namely, the Rapid truck, used for Goodyear air bottles. The six press cars consist of the Motor Age Thomas driven by George Schuster, who piloted the New York-Paris Thomas car into Paris a victor; three Studebaker press cars which were substituted in place of the three E-M-F cars originally entered in the Glidden; a Maxwell press car and a Chalmers-Detroit. The official cars the usual ones: No. 99 Premier six carrying Chairman Hower and Charles J. Glidden and driven by Ray McNamara; an Acme six used by Starter E. L. Ferguson, and two E-M-F pilot cars, one carrying Dai Lewis, the confetti and route hero of the present and previous Glidden tours, and the other under the charge of his assistant, Mortimer Reeves. The complete list of contending

cars is published in tabulated form on other pages of this issue.

So far there has been little complaining on the part of drivers and there seems to be harmony existing on all sides. The fact that so many have gone this far with perfect scores undoubtedly has some bearing on this, but, on the other hand, some credit should be given the organization handling the tour. Dai Lewis as pilot is a veteran whose experience smooths the path, while Starter Ferguson has been through his lines so many times that there seldom is a hitch in getting the field away each morning. If the present state of affairs exists to the end of the tour then the sixth annual trip of the A. A. A. will be a pleasant reminiscence in the motor log of the small army that is following Hower's flag from Detroit to Kansas City, where the big tour ends on July 30.

Chicago to Madison

THIRD DAY

Chicago to Madison, 175.2 miles
 Class A time, 8 hours, 50 minutes
 Class B time, 9 hours, 5 minutes
 Class C time, 9 hours, 20 minutes
 Class D time, 9 hours, 35 minutes
 Class E time, 9 hours, 50 minutes
 Average speed class A, 19.9 m. p. h.

MADISON, Wis., July 14—Special telegram—Today's run can be properly designated the boulevard trip in contrast with the sand plugs of the opening days. The route of 175 miles divides itself off roughly into four divisions: The run of 40 miles through Chicago and its north shore suburbs, throughout most of which distance the roads are oiled and in excellent condition. Division No. 2 extends from Waukegan to Milwaukee, 50 miles, most of light sand and dirt. Division No. 3 is the 30 miles' trip from the Cream City to Oconomowoc, over wide, hard macadam



MAYOR BREITMEYER GIVES SIGNAL TO NO. 103 BRUSH



ONE OF THE STUDEBAKER PRESS CARS

roads in excellent condition but for the unexpected small bridge with ruts at either side and a few low spots. The remainder of the run into Madison is over fairly good dirt roads, sandy in places, but generally capable of good average speed.

Through Interesting Country

From a scientific point of view today's run surpasses that of the 2 opening days. The country affords no prettier trip than over Sheridan road out of Chicago, threading as it does the very heart of the best residential suburbs. The road bends serpentine-like beneath overhanging arches of trees, with architecturally beautiful homes, spacious lawns and omnipresent flower gardens. The road embraces Glencoe, famous for its artificial bumps across the road to impede the progress of cars and also for Evanston, the home of James Patten, the wheat king. From Milwau-

kee to Oconomowoc the country is picturesque, the road winding over fascinating undulations commanding prospects of many miles and the next instant skirting the sides of some of Wisconsin's famous lakes.

Today was entirely free from trouble with a majority of cars, the McIntyre incident already referred to being the most important. At 7 o'clock the No. 104 Brush has not reported. Scarcely a bit of tire trouble was noted; in fact, the good roads and medium pace have almost eliminated that factor of the contest. The usual rule applies to tire contest, namely, that the time lost in tire work is added to the car's schedule, if the motor is kept running.

Cars In Early

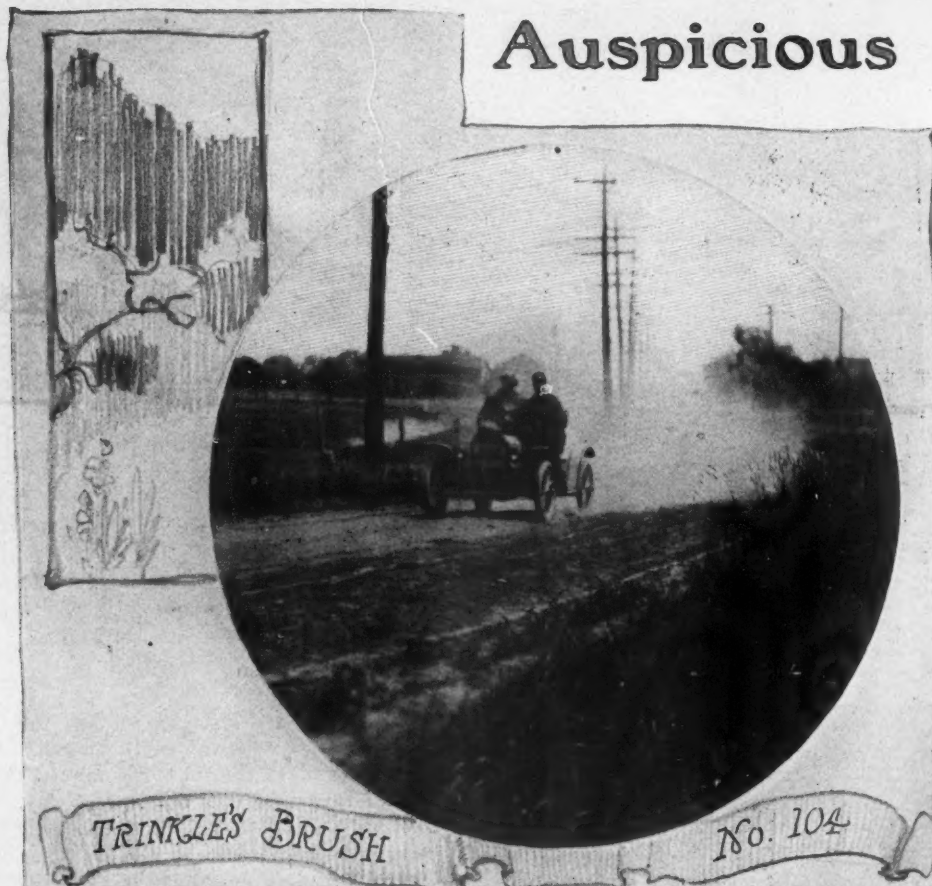
All of the cars were in early, some over 40 minutes ahead of schedule. For the

first time since the start of the run the four Pierce cars followed the chairman's car into the night control. The different makes of cars were well bunched all day. At several points along the road the four Pierces were in parade; at another point the three Premiers were lined up, and the two Marmons and two Maxwells formed groups of their own. This grouping is a good indication of the interest the entrants are taking in the run. The cars are parked tonight along a street in the center of the city and fronting on the capitol grounds. A heavy rope is the only fencing, and one watchman guards them.

Entertainment at Minneapolis

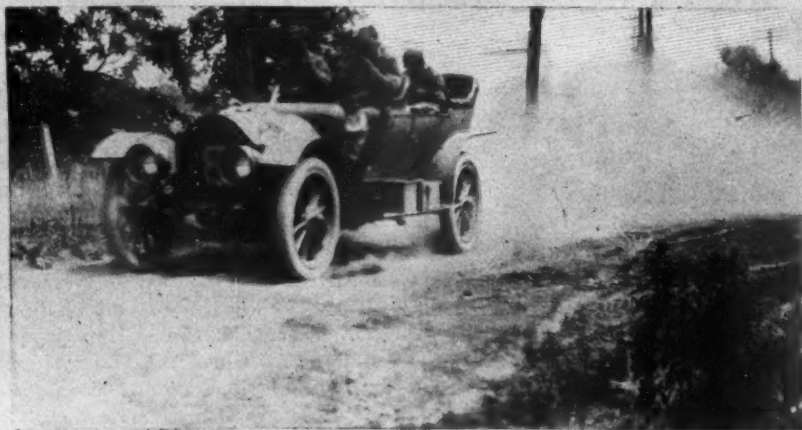
The run tomorrow is to La Crosse, Wis., and if the present brand of weather holds out the day's journey should be a pleasant one. From La Crosse the jump is to Minneapolis, where the first "big noise" of the tour since Detroit is scheduled to take place. Chicago's entertainment was an enjoyable one, but it was the effort of one club, while the entire city of Minneapolis has gone into the proposed blowout heart and soul. The tourists will be there until Monday morning, and starting in Friday night there will be something doing all the time. Saturday morning the visitors will be taken by trolley to Minnehaha Falls and Fort Snelling, while in the afternoon they go to Savage, Minn., to see a special race between Dan Patch and Minor Heir, the two fastest harness horses in the world. In the evening there will be an illuminated parade. On Sunday the card is a motor car trip to Lake Minnetonka, a cruise around the lakes in steamers, a trip to the Country Club, where a buffet lunch will be served, followed by a band concert in the evening. Even then the Gophers will not be satisfied to call it a good job, for they intend going out Monday morning and escort the Gliddenites well on the way to Mankato.

Auspicious Start of the

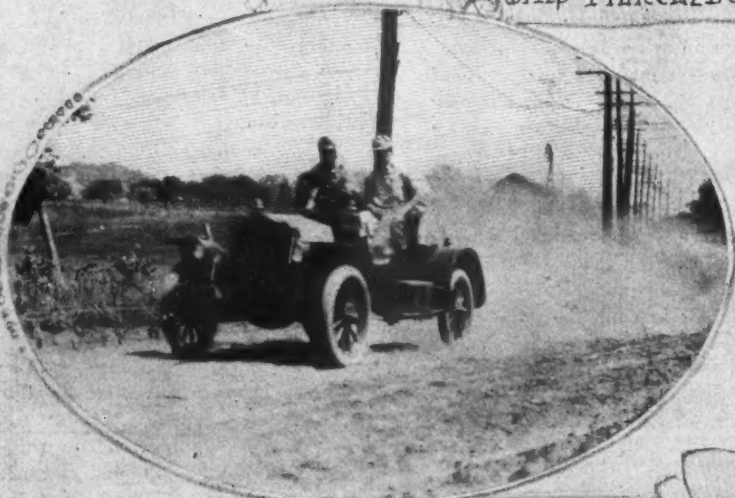


TRINKLE'S BRUSH

No. 104



DAY'S PIERCE ARROW No. 8



GOLDTHWAITE'S MAXWELL No. 7

DETROIT, MICH., July 12—The sixth annual tour of the American Automobile Association had a more auspicious start than any of its predecessors, for Detroit lived up to the promises made and sped the Gliddenites on their way to the booming of cannon and the music of the Maxwell-Briscoe band. Mayor Breitmeyer himself fired the cannon and the good citizens of Detroit furnished the vocal music, cheering long and loudly for each and every car. The tour started promptly at 10 o'clock this morning and forty-two cars were soon on their way, two having preceded the main body—Pilot Dai Lewis with the confetti and Chairman F. B. Hower in the pacemaker's role. Thirteen are contenders for the individual temporary possession of the Charles J. Glidden trophy; fourteen are seeking ownership of the Hower cup, and only three are rivals for the beautiful Detroit prize. The remaining dozen are divided into official, press and supply cars.

Mayor Fires the Cannon

Exactly as the city hall clock in Campus Martius began the tolling of the hour of 10 the indefatigable burgomaster, Breitmeyer, discharged the cannon which sent away the first of the contestants that had been lined up by Ferguson, who has become an essential of Glidden trophy tours. The thousands that filled the big square cheered and shouted and waved flags as No. 100 Moline, of the Dreadnaught trio, jumped away and across the campus under the skillful handling of C. H. Van Der Voort. This car and the thirteen that followed at minute intervals were the runabouts involved in the Hower event.

Cheers For the Drivers

Dwight Huss with his little Brush received a hearty send-off, for not a few remembered that he was one of the pioneer trans-continentalists. The Chalmers-Detroit Bluebird, with Machasky at the helm, came in for recognition, while another later local product, the Hupmobile, driven by Stineman, called for local enthusiasm. As Goldthwaite's Maxwell began the long journey the Maxwell-Briscoe band supplied the music. Jack Williams with the Pierce-Arrow was a second-time contender for the Hower trophy, he having been one of the tied participants a year ago. The McIntyre handled by Goodwin was a starter of the motor buggy type that attracted unusual notice in such fast company. Following it were three other new faces in the Jewel, of Massillon, O.; the Mason, of



Sixth Annual Glidden

Des Moines, Ia., and the Lexington, from Kentucky.

Then came the battlers for the Glidden, the first of the touring cars being a Premier with Webb Jay, well known in track and road contests, in the drivers seat. Cheers greeted his departure, for he is a familiar figure in Detroit. It was perfectly natural that the Chalmers-Detroit Bluebird, Bolger driving, should elicit the shouts of the multitude. Howard Marmon with a car of the same name and Frank E. Wing with its companion, were two promising candidates who have competed before. The E-M-F trio were scratched, and explanations vary as to the exact reason. One story relates to a difference of opinion involving Pelletier and Hower; another explanation relates to the recent sale to the Studebaker company. Perhaps both stories are more or less correct. A Maxwell from Tarrytown, Gager driving, was the sixth tourer and after him started Bernhart and a sturdy-looking Jewel.

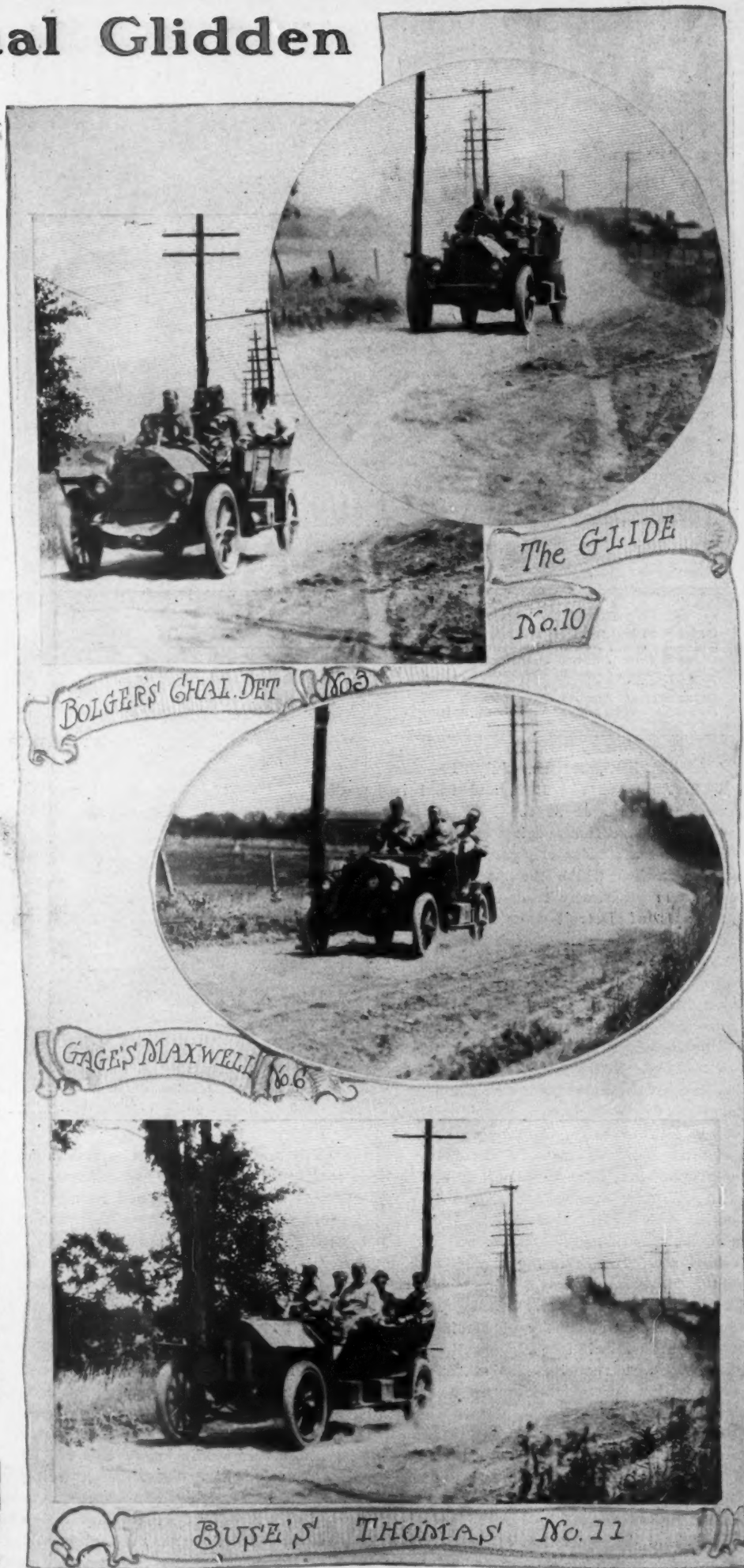
Veterans Are Remembered

Teddy Day and his Pierce-Arrow are familiar figures in Glidden contests, while Walter Winchester, with another Pierce six, added to the possibility that the trophy might find its way to Buffalo for the fourth time. The Glide from Peoria figured next, after which was the Thomas six that had Gus Buse, Jr., again on the job, but W. F. Buse had been unable to accompany him as usual. The Midland from Moline, Ill., made the twelfth combination, with a White steamer of the kerosene-burning variety, the thirteenth starter for the Glidden trophy, H. N. Searles, a newcomer in competition, handling the entry of Walter White.

The trio of baby tonneaux appearing for the Detroit trophy consisted of the two-cycle American Simplex from Indiana, Woods driving; a Chalmers-Detroit handled by Jean Bomb and the Premier entry of H. O. Smith. The press, official and supply cars, including a Rapid truck, brought up the remainder of the starters.

Flag Given Hower

Chairman Hower started some 20 minutes ahead of the first car of the three competitions, and his departure was marked by some pleasing festivities. Mrs. H. H. Hower, the recent bride of his nephew, presented the national colors to the chairman, the band supplied the "Star-Spangled Banner," and the multitude added the hurrahs. Mr. Glidden and Alfred Reeves rode in the chairman's Premier driven by Ray McNamara.



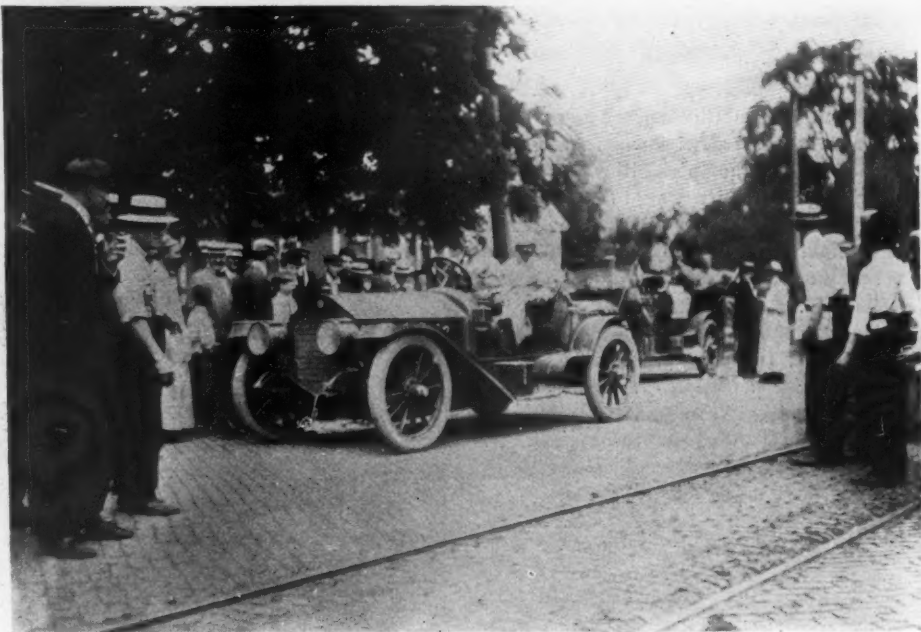


CANNON USED TO START SIXTH ANNUAL TOUR

FIRST DAY

Detroit to Kalamazoo, 142.3 miles
 Class A time, 7 hours, 10 minutes
 Class B time, 7 hours, 20 minutes
 Class C time, 7 hours, 30 minutes
 Class D time, 7 hours, 40 minutes
 Class E time, 7 hours, 50 minutes
 Average speed class A, 19.8 m. p. h.

KALAMAZOO, MICH., July 12—The first day of the 1909, and what is generally spoken of as the last Glidden tour, ended here this evening after a continuous dust fest for the passengers and sand fest with which the machines had to contend practically from the time the pavements of Detroit were left behind until the brick streets of Kalamazoo were reached. In spite of this road calamity—for such roads are nothing short of being a national as well as state injury—but three of the thirty contending cars to start fell by the wayside and received penalties. No. 3, Bolger's Chalmers-Detroit, a Glidden entrant, broke a fender iron and was penalized for work done in strapping it as well as for the cost of the repair material, the total count against the car being 1 point. No. 104 Brush runabout, driven by F. A. Trinkle, burned out a lower connecting rod bushing and was delayed 65 minutes in making a replacement. The trouble started with losing the oil scoop on the connecting rod cap, this scoop dipping into the oil level once in each revolution of the crankshaft and forcing oil through a duct in it to the connecting rod bushing. With the oil scoop off, the oil level was too low to lubricate the bearing through the rod cap dipping and in consequence it burned out. The length of time needed in making the repair the driver claimed might have been reduced one-half had it not been so difficult to work around the motor because of the heat. The penalty registered against the little one-cylinder machine was 6.8 points which included



ACME CAR USED BY STARTER FERGUSON

the price of the new bushings and labor at the rate of 1-10 point for each minute or fraction of time consumed in making the repair.

Perfect Scores Hardly Probable

Heretofore cars were not penalized in the Glidden tour for work done on them, but only for materials used, and this work penalty gives a fair indication of the almost impossibility of any contestant reaching Kansas City with a perfect score, not to mention the penalties that may be added because of the examination of the cars by the technical committee at the end.

The McIntyre motor buggy received 29 points penalty, all for time, the car being late at the night control, the rate of penalty being 1 point per minute or fraction thereof after an allowance of 2 minutes is made on the scheduled arriving time of the

First Day of Tour

car. The motor buggy driver, F. Goodwin, had orders to travel at a certain schedule irrespective of whether it would bring him to the night control on time or not; and it is understood the driver is aiming at a perfect score from a non-work standpoint rather than from being late because of a fast schedule. Today no work of any nature was done on the car.

Although today's run of 142.3 miles over the proverbial sandy roads of Michigan only eliminated 10 per cent of the thirty perfect scores that the contending cars started from Detroit with, the day's run has proven a hard one and if the results of the strains many of the cars received in the deep sandy ruts do not show up in a day or so it is certain they will become manifest by the time the technical committee takes charge at Kansas City. At least 50 of the 142.3 miles of the road today were tortuous, deep, sandy ruts which

caused the cars to whip from side to side when taking these at speeds of from 20 to 35 miles per hour. This proved particularly hard on wheels, and while none of them has given trouble today it is certain that continued running of this nature will develop troubles.

Tire Troubles Numerous

Today might be termed tire day in view of the fact that more than the ordinary tire troubles for a first day out occurred, considerable of this being due to overload in the case of non-contending cars. Webb Jay, driving No. 1 Premier, had two punctures, one in Jackson and another 10 miles out of Kalamazoo. No. 12 White reported two blow-outs, the first on the left rear wheel when 6 miles out of Detroit and the second one at Albion. The chairman's car No. 99 Premier, suffered one puncture when

Detroit-Kalamazoo

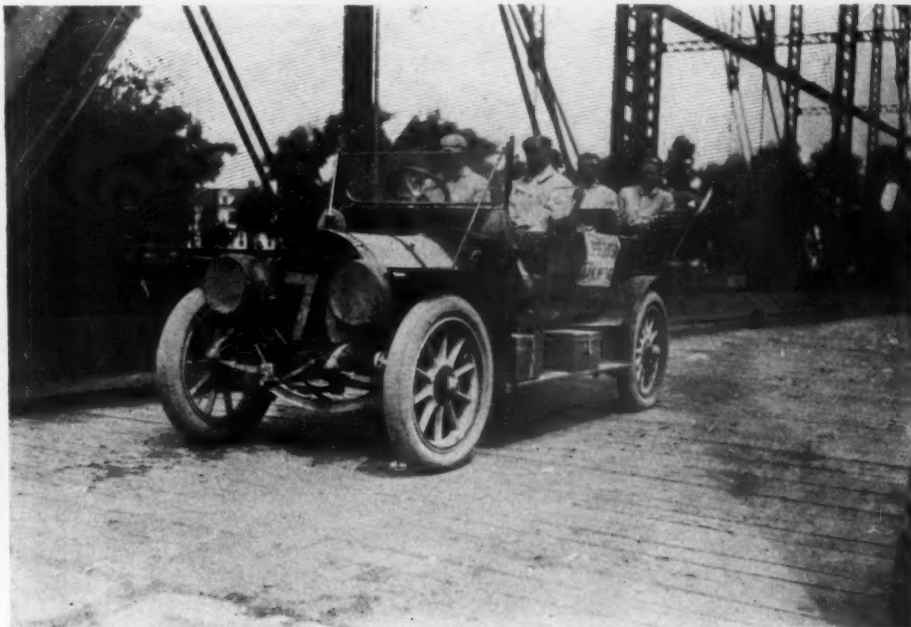
13 miles out of Kalamazoo, and at this point upward of ten cars were lined up in rear, having caught the pathfinder, but being prohibited by the rules from running ahead, were compelled to wait in the rear. No. 101, a Moline, had a puncture at Battle Creek. No. 80, a Studebaker press car, suffered two blow-outs and one puncture. This car was particularly heavily loaded with press representatives and excess baggage, which was largely responsible for the tire trouble. No. 79, Studebaker press car, experienced one blow-out.

Day's Time Schedule

The speed schedule today was as close to the 20-miles-an-hour limit as it was possible to make. The class A cars, which sell from \$3,751 up, ran on a 19.8-miles-an-hour schedule, which gave them 7 hours 10 minutes for the 142 miles. According to the rules, when the running time of the class A cars is 7 hours 30 minutes or less



CHARLES J. GLIDDEN IN CHAIRMAN HOWER'S PREMIER, OFFICIAL CAR



MOTOR AGE'S THOMAS PRESS CAR, SCHUSTER DRIVING

there are 10 minutes added to this running time for class B, cars listed from \$2,451 to \$3,750 inclusive. This made the running time for this class 7 hours 20 minutes, or 19.3 miles per hour. In class C, cars listing from \$1,751 to \$2,450 inclusive, the running time was 7 hours 30 minutes, or 18.9 miles per hour. For class D cars, \$1,000 to \$750 inclusive, the time was 7 hours 40 minutes, or 18.5 miles per hour. The small cars, class E, \$999 and under, had 7 hours 50 minutes, giving a schedule of 18.1 miles per hour.

The Day's Journey

Today's course lies in practically a straight western line from Detroit to Kalamazoo passing through Dearborn, Ann Arbor, Jackson, Albion, Battle Creek and Augusta. The road is sand all the way. During the 7 hours 10 minutes' running

time the tourists looked in vain for gravel or macadam roads but none came. At times the semblance of gravel appeared, but it was only a semblance and sand ruled supreme. In some places it was good sand, in many places bad sand, and dust filled the air from start to finish. For 55 miles out of Detroit or practically to Chelsea the medium sand continued; then came a stretch of 12 miles best described as good dirt roads, but they soon gave way to deep sandy ruts and on approaching Jackson, 75 miles out, one could not but recall the lines used in conjunction with its cars by the Jackson company located there, which are: "No sand too deep, no hills too steep." Sand continued to Albion, 20 miles further, then an improvement was noted, but when Battle Creek was approached the sand ruts became deeper, the

cars floundered from side to side in them and sent the sand flying against the road fences. This condition improved but little to Kalamazoo, 24 miles further. The leading cars overtook the pacemaker, Chairman Hower in his six-cylinder Premier, 18 miles out of Kalamazoo when repairing a puncture, and from there in it was one procession in clouds of dust, described by all the veteran Gliddenites as the worst trip ever made by them.

Pleasant Stop in Jackson

The pleasant feature of the trip was the halt at Jackson, where an appetizing lunch was served by the Jackson chamber of commerce and the Jackson Automobile Co., whose factory was passed on the outskirts of the town. The Jackson chamber of commerce was well represented by W. Withington, chairman of the reception committee, and the Jackson company had Messrs. Holmes, Lewis and Matthews on hand to look after the interests of all and welcome the then dust-begrimed travelers to one of Michigan's big motor car manufacturing cities.

Among the other courtesies extended the tourists at Jackson one was more appreciated than were the presents made by the American Oil Co., whose plant is located in Jackson. As the cars came in representatives of the company visited each and every one of them and handed the driver a 1-gallon can of oil, a 1-pound can of grease and 1 pound of waste with the compliments of the company.

In the evening at Kalamazoo there came a unique invitation from the Chicago Motor Club and the Chicago Automobile Trade Association inviting the motorists to a Dutch luncheon and entertainment tomorrow night in the rooms of the Chicago Motor Club in the New Southern hotel. The invitation was accepted by nearly everyone and a big delegation will attend the Chicago function.



BEAUTIFUL ELDERBERRY ROAD NEAR DOWAGIAC, MICH.

SECOND DAY

Kalamazoo to Chicago, 173.3 miles
 Class A time, 8 hours, 40 minutes
 Class B time, 8 hours, 55 minutes
 Class C time, 9 hours, 10 minutes
 Class D time, 9 hours, 25 minutes
 Class E time, 9 hours, 40 minutes
 Average speed class A, 19.9 m. p. h.

CHICAGO, July 13—The Glidden-Hower-Detroit dash across Michigan, Indiana and Illinois ended here tonight and with the checking in of the last car at the Congress hotel on Michigan avenue what can be properly designated the first stage of the Glidden tour of 1909 ended. Geographically speaking, this initial stage can be properly labeled the lake-to-lake stage, extending as it does from the connecting line between Lakes Huron, St. Clair and Erie and terminating on the southern shore of

Lake Michigan. So far but four cars have lost perfect scores and the remaining twenty-six are running with their clean-score sheets. Of the four to receive penalties but one is in the Glidden ranks, three are Hower contestants and not one of the three rivals for the Detroit trophy has been penalized.

Today—and it is the 13th of the month—brought trouble to four of the cars: No. 3 Chalmers-Detroit, that developed fender troubles yesterday, lost .4 point today by time lost in rewiring the broken fender iron to keep it in place, giving it a total penalty of 1.4 point. A perfect score to drop was No. 103 Brush runabout, which had to have the bearing in one of the front road wheels adjusted, the penalty amounting to .4 point, which in the language of the ordinary Glidden dust con-

Second Day of Tour

sumer means that 4 minutes were needed to do the work, the penalty being .1, or 1-10 point, per man per minute for work done.

The McIntyre motor buggy lost 423.7 points, due to having to weld a part to a rear spring and adjust same. Three hours 7 minutes were needed in the work and it was 4 minutes to 12 when the car arrived. The No. 104 Brush received 7.3 points for having to fit new connecting-rod bushings. The penalty consisted of .3 point for material and 7 points for time, the task requiring 70 minutes.

Run Over Dusty Roads

Today's run, like yesterday's, was a dust-fest, in spite of the many predictions of macadam for over half the way. Father Neptune apparently is out of sympathy with the tourists and for 90 per cent of the 173.3 miles each car kicked up a dust cloud so dense that others could not follow with safety at less distance than 50 yards. The run out of Kalamazoo started off propitiously with a few sand stretches and symptoms of what might be diagnosed as one-time macadam. But visions of the white ribbons of macadam that have made Indiana famous were not to be found so readily in Michigan and soon tortuous, twisting, serpentine sand ruts engrossed the attention of every passenger in every car. These sand ruts are treacherous, particularly if they are deep. When the pacemaker's car goes along they are small, innocent-looking tracks that wander to the right side of the road almost into the long grass and pregnant with fickleness immediately lose themselves in the grass on the opposite side. This right-and-left variation scheme continues for 100 yards at a time and by the time a score of cars have rolled and whipped through the ruts they are big enough to bury a grown hog in. In taking them the sensation is not unlike shooting a rapid—the car lurches to one side, then swings to the other, the amount of swing depending on whether you are a tonneau passenger, or if you are poised on an auxiliary tonneau seat or more fortunately and carefully reposed in the rocking-chair seat beside the driver. About the middle of the distance a cloud of sand is thrown up at one side or the other as the front wheels slew through it.

Improvement in Scenery

Compared with yesterday the run was prettier; endless vineyards border the roadsides almost to Dowagiac, 44 miles, and where these are not endless fields of golden wheat and many fields of corn engross the pastoral tourist. The country from Kalamazoo to South Bend, 70 miles, is rolling, and from South Bend to Chicago, 100 miles, is rolling for 30 miles out, when it gives way to the proverbial flat lands of Chicago vicinity.

Little macadam was looked for by the Gliddenites before reaching South Bend



BRIDGE OVER ST. JOE RIVER AT SOUTH BEND, WHERE STUDEBAKER SERVED LUNCH

Kalamazoo-Chicago

but once this northern Indiana metropolis was passed everybody looked for the white stone roads. But bitter disappointment was theirs. Instead of going by way of Michigan City the confetti was laid through LaPorte and Valparaiso, the route of the old St. Louis tour, and 34 miles out of South Bend the dust continued. Sometimes it was yellow dust, sometimes it was white dust, often it was black dust, but it was always dust. It was undeniably a case of:

Dust! Dust! Dust!
In your eyes and nose and mouth;
And nothing but Thermos bottles
To remedy the drought.

Incidents of the Day

In spite of dust conditions four incidents varied the otherwise monotony of the trip: Just after the motorists crossed the iron bridge entering South Bend they were treated to a noonday lunch by the Studebaker Automobile Co., J. M. Studebaker himself being an interested participant in the hospitalities. A Standard Oil wagon was on hand with gasoline and oil and this made the only fuel stop of the day. As at all lunch stops—for there was one yesterday, thanks to the generosity of the Jackson, Mich., chamber of commerce—the cars got well bunched, more than a dozen of the khaki-laden machines having rolled in before the chairman's car departed.

Experience No. 2 occurred just out of Westville when a signal man and a miniature pyramid of rough boulders planted jointly in the middle of the road opposite a small cemetery demanded a left turn when Dai Lewis' route book said "straight ahead." The road-builders were the cause and their usurpation of the macadam made a detour of several miles through sand dunes imperative. So deep was the sand and so long the grass that all the road appeared to be was a field of tall grass with two winding yellow streaks across it, the streaks being the usual ruts, one for each wheel. The macadam was welcome after 5 miles of wilderness wandering and scarcely were the cars bounding over it than "Accident ahead" startled the crews. The Firestone tire truck, a Rapid, had gone too far to the side of the road in meeting a load of hay and the wheels slipped axle-deep into the ditch. Chairman Hower and a half-score of contesting and newspaper cars that were trailing him arrived and before they had set to work to extricate the truck over twenty dusty cars were lined up, which soon grew to thirty and for the first time in the history of the Glidden the tourist had the pleasure of seeing a motor caravan winding for over ½ mile and when it disgorged its passengers who went ahead to assist the truck the sight resembled the disbandment of an army. Messrs. Hower, Glidden, Smith and Van Der Voort were the Napoleons of the rescue party



WELCOME EXTENDED TOURISTS AT DECATUR, MICH.

and directed block-and-tackle arrangements and a Studebaker truck was hitched to the rear. But all was of no avail; time was too precious, the tour must proceed; but a Studebaker and Motor Age Thomas press car remained to play the Samaritan role. Ten minutes completed the task, with the aid of block and tackle and strong arms.

Greetings For Tourists

Today's run was more human than that of yesterday. At every road crossing was a group made up of local motorists and their horse-loving friends. Handkerchief and hand-waving were standing orders to South Bend and at Decatur the inhabitants had stretched a banner across the street containing the inscription "We Hope You Will Win." At another point was a banner, "No Glencoe Bumps Here,"

the reputation of Chicago's north-shore suburb with its bumpy sidewalks across the street having reached even here.

The Chicago Motor Club, with its usual up-to-dateness, had wired Kalamazoo notifying the Gliddenites of a speed trap on Jeffery avenue entering Chicago, and here the club met the tourists and handed them invitations for a Dutch luncheon coupled with which was the human-interest comment, "Wash for High Necks Only." As the later hours of the evening told, the "luncheon" was the hugest kind of a success. Cars were provided to take the tourists to and from the clubrooms where they were given a chance to see the moving pictures to the recent Indiana and Cobe trophy races. Refreshments were served, Chairman Martin, of the reception committee, being in charge.



ROLLING INTO CHICAGO OVER JEFFERY AVENUE, SOUTH OF JACKSON PARK



UNUSUAL PHOTOGRAPH TAKEN AT BELLE ISLE BY GEORGE R. LAWRENCE, OF CHICAGO, SHOWING THE THOUSAND CAR PARTI

Detroit Reaches High-Water Mark in En

DETROIT, Mich., July 12—The last man to climb into the last car that got away in the Glidden tour heaved a sigh of relief as the city hall faded from view and the machine bowled out Michigan avenue with Kansas City as its ultimate destination. The sigh was not occasioned by joy at leaving the hub of the motor industry, but, like scores of others who preceded him in the line, there was a feeling of relief on the part of the tired mortal in question over the fact that Glidden tour days did not extend over a longer period. If they had some of the participants, even accustomed as they are to strenuous doings, must have landed in a sanitarium.

Not a Dull Moment

At the outset the Detroit Automobile Dealers' Association committee having the entertainment of Gliddenites and other visitors in charge, announced that there would not be a dull hour from the moment the first contingent reach the city until the last tourist had departed. There wasn't a dull minute, much less an hour.

What with a banquet Friday evening that lasted well along into the night; a tour of the inspection of local motor car concerns Saturday morning; a parade Saturday afternoon in which 1,030 machines participated, and which marked an epoch in such events; a dinner at the Automobile Club of Detroit for A. A. A. officials, and a frog leg dinner at Lighthouse inn in the evening for visiting newspaper men, with E. Leroy Pelletier as host; a boat ride across Lake St. Clair to the St. Clair flats, the "Venice of America," on the palatial steamer City of Cleveland, Sunday afternoon, and numerous little dinners, committee meetings, and the festivities attendant upon getting away Monday morning the motorist who managed to snatch even a few minutes of the simple life didn't venture inside the danger zone that extended for a mile or more in every direction from the Hotel Pontchartrain, headquarters of the A. A. A. touring commit-

tee, and from which the Glidden tour started.

The real event of the preliminaries, and the only one which came anywhere near furnishing a sensation, was the dinner tendered officials of the A. A. A. at the Pontchartrain Friday evening, at which covers were laid for 110. Chairman Hower, of the contest board, the principal speaker of the evening, did more than spat some of his hearers on the wrist. He rapped them across the knuckles in a way that left the only sting in the entire program. Chairman Hower was disappointed at what he chose to construe as apathy on the part of many manufacturers, and he did not mince his words in giving expression to his displeasure.

"If anyone had asked me at the outset how many cars we would have in the tour this year," said Mr. Hower, "I should have guessed 125. We all guessed that. Then came the revelation. I began to receive letters from manufacturers all over the country who found that they could not enter the tour. The reason? They were enjoying too much prosperity. They couldn't see where they were going to gain anything by entering the tour when they were unable to fill the orders

Not a Dull Moment Experienced by Visitors While Waiting Start of Annual Tour

they had. So we have fewer cars than we expected.

Hower's Speech Surprises Many

"I tell you, gentlemen, that this motor car business may be an industry to the manufacturer. To us who own and drive cars it is a sport. We are interested in these contests for the sport they offer. I do not say those manufacturers who made excuses were afraid of the sporting chance. That would be unfair to them. But they did not enter, and I tell you that we must keep up the sporting end of the industry if we wish to maintain the industry itself.

"I shall be criticized for what I am saying, but I do not care. I am not here to promote the industry, but to promote the sport through contests. I say that those manufacturers who did not enter this tour hurt themselves, not us, for the Glidden tour shows the progress of the motor car. Those who are unwilling to show what progress they have made are hurting the industry, not the sport."

A murmur of surprise followed Chair-



DETROIT PARADE AS IT APPEARED ON THE BUSINESS STREETS



CAR PARTICIPATED IN DETROIT'S RECORD-BREAKING PARADE LAST SATURDAY IN THE PRE-GLIDDEN ENTERTAINMENT

Entertainment of the Gliddenite Army

Motor Parade Brings Out More Than 1000 Cars, Making Inspiring and Unusual Sight

man Hower's remarks, indicating plainly that many of his hearers were not in sympathy with the pessimistic view he took of the situation, but no further reference to the incident was made.

Welcome by the Mayor

Chairman Hower was presented by Mayor Breitmeyer with a gold key to the city. The mayor dwelt at some length upon the industry and what it has done for Detroit, welcoming the tourists and other guests in a happy manner.

President Speare, of the A. A. A.; Charles J. Glidden, donor of the trophy which is the prime cause of the tour; George C. Diehl, of Cleveland, good roads advocate par excellence; Horatio S. Earle, former Michigan highway commissioner; Hugh Chalmers, of the Chalmers-Detroit Co.; Benjamin Briscoe, Colonel Pardee, and others were also on the toast list, which was an extensive and too prolonged one, and in which all the participants vied with each other in saying kind things about everybody else. President George Lane,

of the Detroit Automobile Dealers' Association, was toastmaster, and contributed much toward making the event the enjoyable affair it proved to be.

Detroit's Mammoth Parade

One thousand and thirty motor cars took part in the greatest car pageant ever held, a part of the Glidden tour celebration on Saturday, and the decorated divisions, the regular cars, and the floats, extended over a course 10 miles in length. Combined with this almost phenomenal turnout were the hundreds and hundreds of touring cars and roadsters parked along the route, so that the ensemble was probably the greatest gathering of the motor-driven craft. The owners and manufacturers of the city had promised among themselves to give a spectacle that never had before been equalled and in this they well succeeded.

But not alone in numbers did this event surpass previous affairs of its kind, but also in the matter of decoration did it excell. There were those in the city who have seen the mardi gras and European triumphs, but the opinion was unanimous that never before has there been such a galaxy of the wonderful and beautiful. Electrically, gasoline and steam-driven

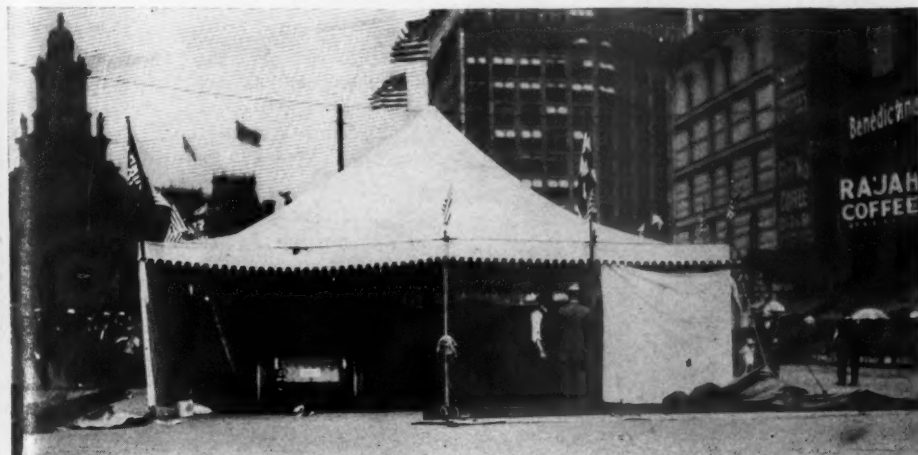
cars participated, and cut flowers, artificial ones, ribbons, satins, birds and all imaginable forms of decorations were in evidence. Indeed so much painstaking labor had been put upon those who were competing for the handsome prizes that the judges, persons well able to discern the beautiful ones in harmony of coloring, were at a loss, and in some cases the victor in the divisions was cause for deep pondering.

Cadillac Wins Big Prize

Sufficient handsome rewards had been offered to make competition well worth while, and consequently the prize list was rather long, but that of the contenders was far longer. Constant, enthusiastic applause along the route attested to this fact, and novelties in schemes were galore. Cadillac was the fortunate one in the class for the most artistic float or decorated car in the parade, and its representative was from the factory. This was a float built to depict the landing of Cadillac in the realistic settings. The car had been fashioned into a large boat, in the bow of which stood Cadillac, a large banner in his hand. Back of him in his craft sat a number of Indians in their full tribal regalia, and so deftly had the construction been planned that the driver of the car was invisible from the exterior, just this little touch giving the whole float a gliding effect. A cut glass punch bowl, tray and glasses was the reward. In the same general class was a "woman's special" and with a diamond and ruby ring to be presented this went into the doubtful section, and will be awarded later.

Parade an Imposing Sight

The parade was started at a few minutes after 1 o'clock, ran through the center of the city and out to Belle Isle park, where the actual judging took place, and when the entire number of cars had assembled on the green there a view was presented which has had no equal. As impressive as was the length of the event as it passed a given point downtown, it



TENT IN WHICH TECHNICAL COMMITTEE EXAMINED THE CARS



COMPLIMENTARY DINNER IN HONOR OF GLIDDEN TOUR AT THE PONTCHARTRAIN FRIDAY NIGHT

was even more so when the machines were banked and massed scores of rows deep. Electricies took the lead in the contesting division, although the police squad elicited no little comment. Four little Maxwell Junior runabouts, each carrying one officer in addition to the driver, cleared the streets instead of the more conventional platoon of horsemen. The way the four kept in an exact line won the praise of all motorists who saw the start or en route watched the line. The Anderson Carriage Co. seems to have turned loose a month's output, perhaps, for it was stated that the value of the half-hundred Detroit electricies was close to \$125,000. The Columbus electricies also were well represented, as were other standard makes. The count of the various makes was not authenticated, but it was stated around headquarters in the evening that Cadillac and Brush led with about eighty cars each. Chalmers-Detroit, Packard, Regal, Maxwell, E-M-F, Hudson and Rapid were not far behind, however, and all had more than a dozen apiece. So many of the 400 decorated cars were so well disguised that it was almost impossible to tell at a glance just what they were. The features of the cars are too numerous to mention, and a few must suffice.

"Spirit of '76"

One that attracted considerable attention was a float entitled "The Spirit of '76," and was a representation of the famous painting. Dr. E. B. Smith furnished the outfit, importing a veteran trio which could fill the parts. The local fire department was on hand with its flying squadron holding second place in line. Morgan & Wright Co. had a particularly comprehensive display, using four large trucks to show the details of making rubber tires. First was a scene snatched from the tropics, with a number of boys of color gathering sap from trees. Then on the fol-

lowing platforms were stages in the processes of curing, and through various steps to the shipping of the completed product. Specimens of rubber in many forms were hung on the sides of the machines.

The News-Tribune has been conducting a "prettiest little girl" contest and about 200 of the gaily-dressed little maidens who have been scoring highest were carried in six big trucks of the Rapid species. A really beautiful creation was seen in a car decorated by B. Schroeter, a local florist, who trimmed his machine with elaborate taste, using real flowers and silk ribbons. In front rode a great swan with spreading wings. Sunflowers formed the feature on a Columbus electric owned and driven by Gabriel and Mrs. Chiera. The number of beautiful electricies driven by the equally beautiful women of the City of the Straits was legion, and it is likely that the women along the route feasted

their eyes upon fascinating gowns as well as upon the machines.

For electric cars there were two prizes, the first a chest of silver, won by the makers of the Detroit cars, who had one decorated with pink and white roses, a solid mass. The second award, of a woman's traveling case, went to Mrs. Eva Beecher, whose car was trimmed with white roses and doves.

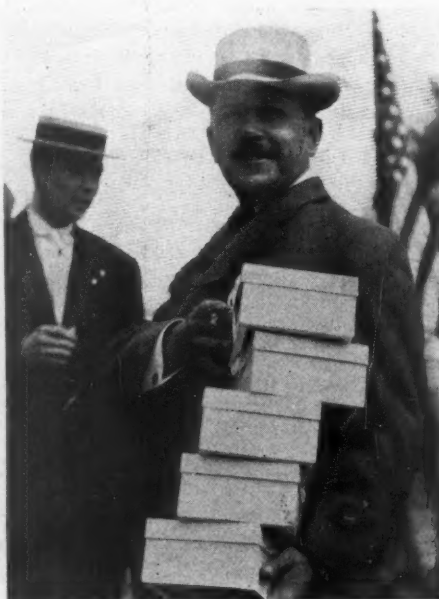
Seeking a Prize Winner

For gasoline and steam cars there also were two prizes, but the first one is in doubt until the car which was adjudged the best is located. This is really a peculiar situation, when there is a handsome chest of silver awaiting some fortunate Detroit motorist who is unaware of the fact. Second prize was presented to the Maxwell car, trimmed with a bank of white roses, filled with children, and bearing the Maxwell motto above, "Perfectly Simple, Simply Perfect." The letters were in purple. Three motor cyclists were given prizes, awarded, of course, because of decorations, but the two-wheeler which elicited the most applause was one on which a real live dog sat on the rear fender, and the animal seemed to enjoy the doings as much as the rider.

Famous cars of several makes joined the procession, prominent among them being the Indiana trophy winner, the Chalmers-Detroit Bluebird driven by Matson. Another was the Regal, which is en route from the Atlantic to the Pacific; and others were the flag-to-flag Chalmers-Detroit pathfinder, which has recently returned from Mexico City, and the little Brush which crossed the continent and incidentally climbed Pike's peak.

Detroit Club Entertains

One of the most successful social functions preceding the start of the tour was the dinner given by the Automobile Club of Detroit to the directors of the A. A. A.,



HANDING OUT STUDEBAKER LUNCHES

the affair taking place Friday evening at the picturesquely situated Country Club at Pine Lake. President C. H. Hecker made a versatile toastmaster, and under his skillful suggesting the orators kept themselves in condensed form. President L. R. Speare and Chairman F. B. Hower spouted some about the A. A. A., but more about the hospitality of Detroit, to which S. A. Miles, Alfred Reeves, Colonel F. M. Joyce, Thomas Henderson and A. G. Batchelder added other hunks of appreciation. Edwin S. George said the club was glad to have such thankful guests. Intermingled with the occasion was the formation of the Aero Club of Michigan, of which W. E. Metzger was elected president and compelled to supply a verbal acceptance. Since Charles J. Glidden is becoming a well known aerial traveler his presence naturally brought about some words of aeronautical complexion.

Maxwell Band Popular

There was no feature of the preliminary entertainment which was a greater success and proof of a happy thought than the presence of the Maxwell-Briscoe band from Newcastle, Ind. The body of men showed well their training and enlivened every important event—the parades, the boat ride, the concert and every once in a while appeared at the hotel headquarters to serenade their chiefs and everyone within earshot. Indeed the band was well appreciated.

When the newspaper men, who had with one mind attended the baseball game on Saturday, returned they were rounded up by Le Roy Pelletier the recently appointed assistant general manager of the Studebaker Automobile Co., and in a number of Studebaker cars were taken to a famous shore resort, the Lighthouse inn, for a frogs' leg and fried chicken dinner. About thirty-four sat in the grill room and toast-



C. H. VAN DERVOORT, MOLINE

ed the successful motorist and publicist. Mr. Pelletier expressed his welcome in a particularly apt form, in that he thanked the guests for having enabled him to be promoted to his new position.

For a number of those who gathered around the Gliddenites there were other contests in mind. From several quarters representatives of coming events came to arouse interest in them and to explain the rules and routes. Road races, hill-climbs, and endurance contests were about equally divided. The Indianapolis speedway was well represented by a number of newspaper men from that city, and of course by the motor car manufacturers. The Atlanta speedway also had a prominent in-ning and circulars giving details of its construction were placed in proper hands. The races of the Quaker City Motor Club in October and that of the Lowell club

on Labor-Day were spoken of frequently, and from present indications will be well supported. A number of the Munsey staff men—Newmeyer of New York, Wade of Boston and Ward of Washington—were on hand with entry blanks and full particulars of the Munsey endurance contest from Glidden tour rules. They did considerable missionary work in the interest of the run while here.

Denver's Glidden Plans

Denver, Colo., July 10—After traveling for 2 weeks over burning sands, through mudholes, opening barbed wire gates, looking at prairie dogs and mirages, the Glidden tourists will find a welcome at Denver on the evening of Saturday, July 24, that will make them glad they came. While the Denver Motor Club has been pretty busy the past few weeks preparing for the Brighton road race of July 5, the officials still have had some time to devote to preparations for the Glidden tour entertainment, and they promise the eastern visitors 2 days of the rarest enjoyment of the entire journey.

The program is only partly mapped out as yet and additions will be made from time to time. An escort of at least 100 cars will meet the tourists at Bennett, 30 miles out, where the E-M-F pathfinder found its reception committee. The route through the city streets will be decorated and at the Denver Motor Club headquarters where the cars will check in there will be an immense electric sign "Welcome." The club will be open all night and a large reception committee will see that the tourists get to bed in time to get up for breakfast.

On Sunday 100 cars belonging to members of the club will meet at the club house at 10 o'clock to take the tourists over the city and suburbs. At 4 p. m. five of the special sightseeing cars of the



CADILLAC FLOAT THAT WON FIRST PRIZE IN DETROIT'S BIG PARADE LAST SATURDAY



BIRDSEYE VIEW OF THE DETROIT PARADE

Denver City Tramway Co. will take the party to the White City, where dinner will be served on the veranda at the Casino, giving the visitors a view of a sunset in the Rock mountains. On Monday a special train will take the party to Colorado Springs to the foot of Pike's peak, and then on to Cripple Creek, with a visit to the Vindicator mine, the largest gold-producing mine in the world. After penetrating the bowels of the earth for a thousand feet or more the train will run back to Colorado Springs and then a motor car trip will be made to the Garden of the Gods and to Glen Eyrie, General Palmer's home and other points of interest. The return to Denver will be in ample time to permit the tourists to get a good night's rest before resuming their journey Tuesday morning.

While in Denver the contestants' cars will be parked on the state house lawn in the shadow of the soldier's monument

which will be unveiled on the day of the arrival of the Gliddenites. A number of the members of the Denver Motor Club will join the tour here and go as non-contestants to Kansas City, where the big contest ends.

Gumbo Mud for Gliddenites

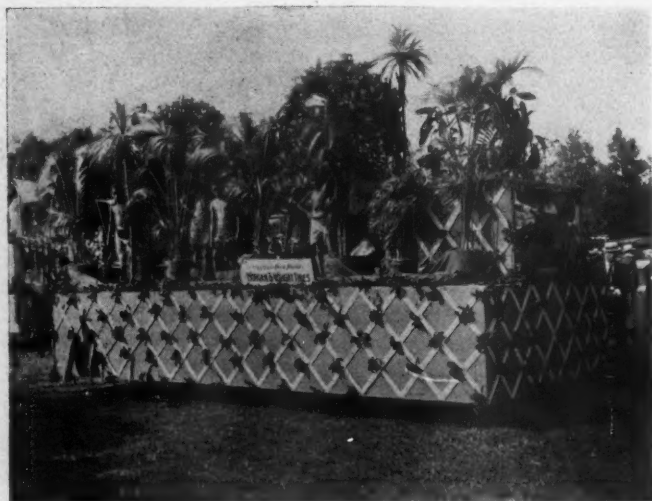
Omaha, Neb., July 12—The heavy rains of the last 2 weeks have put the members of the Council Bluffs Automobile Club on the anxious seat with the Glidden tour already under way. The local enthusiasts have learned from their own experience that Iowa gumbo, mixed with the proper proportion of water, is enough to discourage the most enthusiastic, and they fear that the Glidden tourists will arrive in Council Bluffs somewhat peeved unless something is done to put a check on the excessive moisture. The executive board of the club met Saturday to discuss the problem. It is probable an appeal will

be sent out to the farmers along the route of the Glidden tourists asking them to drag their roads and get them into the best possible shape. With the moisture penetrating for a foot or more into the gumbo, it is said that nothing short of a prolonged dry spell will put the road into any kind of condition unless the farmers aid in the work.

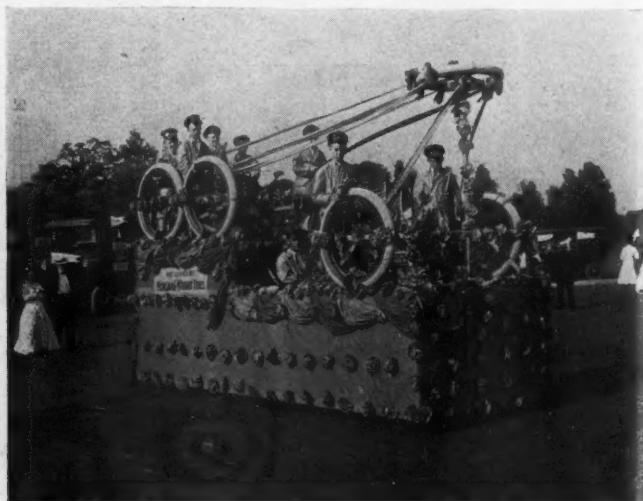
It is more than probable the farmers will listen to the appeal of the club, for the country gentlemen are very much interested in the motor car at the present time, as Dai Lewis found out when he went through this section last spring in the pathfinding E-M-F. The A. A. A. emissary was received with hearty greetings by the farmers and was told that when the tour came this way the southwest would do its duty and help make the affair a success. It is thought that the farmers will remember their promises now, for their help is needed. It is wonderful what a vast amount of good can be done with a drag made of a split log, and this device undoubtedly will be used on the roads.



SNYDER, DRIVER OF MARMON



MORGAN & WRIGHT FLOAT, SHOWING RUBBER IN CRUDE STATE



MORGAN & WRIGHT FLOAT, SHOWING FINISHED PRODUCT



ONE OF THE DECORATED PARADE CARS



MAXWELL-BRISCOE BAND AT DETROIT

CONTESTING CARS EXAMINED BEFORE START

DETROIT, MICH., July 11—The thirty cars entered for the Glidden, Hower and Detroit trophies were turned over to the contest committee Friday afternoon and they were parked on the square oppo-

sition of the tour. In part A as well as in part B Fig. 1 refers to the wheel and axle measurements, the line X showing how the measurement is made between the wheel felloes. This measurement is taken at four points on the wheel which on a clock face would be designated as 12, 3, 6 and 9 o'clock. These measurements are recorded in the spaces marked 1, 2, 3 and 4 on the chart.

Fig. 2 of the chart applies to the frame and axle measurements. In arriving at these measurements a cord Y is stretched from the front spring horn at E1 to the rear spring horn at E2 and measurements are made from this line to the various frame parts. At the points designated 1, 2, 3, 4 and 5 measurements for the frame are made, the points of the opposing arrows indicating the points between which measurements are made and on each point on the frame from which such meas-

urements are made the frame is stamped to assure making the measurements at the completion of the tour at the same points. Measurements at points A and B refer to the frame and axles. Fig. 2 applies to cars fitted with semi-elliptic springs in front and rear, but where elliptics or three-quarter elliptics are used in the rear or in the front the illustration is altered to suit the case.

Penalties Not Specified

There is nothing in the rules as to what penalties will be imposed for variations in these several measurements at the completion of the run as compared with those made at the start, but an announcement regarding this was made during the day.

The majority of the competing cars in this tri-trophy contest are 1909 models with a few of the 1910 improvements added in some cases, and in others new



SHIMP IN JEWELL ROADSTER

site the Pontchartrain hotel, the official Detroit headquarters, where Secretary Ferguson is in charge and where Joseph Tracy, of road racing fame, and C. S. Ricker constitute the technical committee. This committee began its arduous task of measuring the frames and axles of the cars early Saturday and although it continued all day a 6 o'clock start was necessary on Sunday and it looks as if the entire day will be required for the work.

Taking Measurements

The chart on page 16, one of which is required for each car, shows the general method of measurements and how the same are recorded. The chart consists of halves, A for the recorded measurements taken now and B for the measurements to be made in Kansas City at the comple-



CARTERCAR FLOAT AS IT APPEARED IN DETROIT PARADE

1910 models are used. The Pierce-Arrow entry of four cars is conspicuous in that all are six-cylinder types, the two Hower entries being 36-horsepower machines with 4 by 4 $\frac{1}{4}$ -inch cylinders, these being the same as this year excepting the bore is raised from 3 15/16 to 4 inches. The brake drums are wider and of greater diameter and the drum is a steel stamping instead of a steel casting used hertofore. All types of Pierce-Arrow cars for next year will use Timken roller bearings in the front wheels as well as at the outer ends of the rear axles, annular ball bearings being used in the other parts of the rear axle and the transmission.

Pierce-Arrow Entries

The two Pierce-Arrow Glidden entries are 48-horsepower machines with 4 $\frac{1}{2}$ by 4 $\frac{3}{4}$ -inch cylinders, the same size as used this year. These cars have been improved for next year by using larger brakes and brake drums made from steel stampings; three-quarter-elliptic springs have superseded the semi-elliptics; and the rear tires have been increased from 36 to 37 inches in size. Important on both Glidden and Hower entries is bringing the front axle forward to the radiator plane which has resulted in increasing the wheelbase of the 48 from 130 to 134 $\frac{1}{2}$ inches.

The three contending Premier cars are 1910 models, the two contesting for the Glidden and the one for the Hower being identical chassis. No. 99 Premier, the chairman's car, is a six-cylinder. The three contesting Premiers have motors with 4 $\frac{1}{2}$ by 5 $\frac{1}{4}$ -inch cylinders. This year the stroke is 4 $\frac{1}{2}$ inches, although of late many of the 5 $\frac{1}{4}$ -inch size have been shipped. This adding $\frac{3}{4}$ -inch to the stroke is an important change and quite in harmony with the long-stroke wave that has swept over Europe for the last 18 months. In all other respects the cars are 1909 in caliber and have a few refinements added. A commendable precaution in these cars

is the locking of the radiator caps by means of short chains and miniature padlocks. The fitting of these locks precludes any possibility of tampering with the cooling water which will be a considerable factor on the part of the tour west of Omaha. All of these cars are double-headed with speedometers, carrying the Stewart and Warner instruments.

The three Moline entries in the Hower ranks are 1910 machines which are practically the same as the present year models. All three are alike in every detail and are four-cylinder types with 4 $\frac{1}{2}$ by 5-inch four-cylinder motors and 117-inch wheelbase. These cars are not carrying any spare parts, the Moline company not even taking additional spark plugs.

The three Chalmers-Detroit cars are all exactly alike, being of the 40-horsepower class with 5 by 4 $\frac{3}{4}$ -inch cylinders and four-cylinder motors. They are strictly 1909 types excepting that 1910 Mayo radiators are being used. Of the three cars one competes in the Glidden, one in the Hower and one in the Detroit competitions.

Maxwell Chassis Identical

Two Maxwell cars are contending, one in the Glidden and one in the Hower. Both chassis are identical. The four-cylinder motors have cylinders 4 $\frac{1}{4}$ inches square, the wheelbase is 104 inches, all springs are wrapped and Ajax anti-skid tires used.

Nos. 4 and 5 in the Glidden are 1909 model 32 Marmons, familiarly known as the Marmon small car, the four cylinders being each 4 $\frac{1}{2}$ inches square and the wheelbase 112 inches. Both chassis are alike and not a feature other than used on this year's model appears. In these cars the transmission is a unit with the rear axle.

But one White steamer is competing. It is a 1909 model with the new 1910 engine; in fact, the chassis, excepting the engine, is the same one as was driven by

Walter White in the recent Harisburg 4-day reliability run. Chiefly conspicuous in this car is the use of kerosene for fuel. Walter White announces that with kerosene the fuel economy is from 15 to 25 per cent greater than with gasoline. The car is not entirely a kerosene affair because 3 gallons of gasoline are carried in a separate tank in the end of the main fuel tank for the pilot light.

The Mason entry in the Hower field is a two-cylinder 1909 car characterized by planetary gearset and single-chain drive. A novelty in the 5 by 5-inch motor is casting the intake manifold integral with the cylinders and crankcase so that the carburetor appears to be sitting on the side of the crankcase. Nothing special is fitted to this car for the tour, the springs not being wrapped or shock absorbers fitted. The car has 112-inch wheelbase.

Midland a Western Car

The Midland, a west-of-Chicago product, is a 1909 car, but which it is stated will be continued for 1910 in practically as it is on the tour. A conspicuous feature of the car is the spring drive interposed between the clutch and gearset to eliminate jar due to too sudden engagement of the clutch or too quick application of the brakes. The car's equipment appears in the accompanying specification table.

The Lexington, made in Kentucky, is an assembled car, but one in which an effort has been made to secure from different manufacturers the best in the line. It uses a four-cylinder Rutenber engine and was recently described in Motor Age. The company has been turning out cars since May 1.

The two Jewell cars from Ohio are interesting in comparison with the first small cars of this name brought out some years ago. They are like the last year Jewell of the four-cylinder type with Rutenber motors. Their appearance greatly resembles a six because of the exceptionally long hood, due to carrying a cylindrical gasoline tank transversely between the fourth cylinder and the dash.

Both of the little Brush runabouts in the Hower classification are regular 1909 machines. They are the only cars in the tour not fitted with magnetos of any nature; they are unique because of the spiral springs used and the combination Brush shock absorbers, and also being of the single-cylinder variety.

One Lone Motor Buggy

The McIntyre is a motor buggy with 34-inch road wheels fitted with solid rubber tires. This car has a two-cylinder opposed motor and is a 1909 stock machine. The American Simplex, made in Indiana, has the distinction of being the only two-cycle car exhibited and it is competing in the same construction as when it appeared on the recent motor car show circuit. The Hupmobile, one of the new Detroit products, is an interesting little four-cylinder runabout with a single transverse, invert-

HALF-A- EXAMINATION OF RUNNING GEAR OF - CAR AT DETROIT		HALF-B- EXAMINATION OF RUNNING GEAR OF - CAR AT HANABECITY	
TAKE DISTANCE MARKED "X" AT FOUR POINTS EVENLY SPACED AND MARK 1-2-3-4		TAKE DISTANCE MARKED "X" AT FOUR POINTS EVENLY SPACED AND MARK 1-2-3-4	
1 ---	3 ---	1 ---	3 ---
2 ---	4 ---	2 ---	4 ---
REMARKS		REMARKS	
1 ---	5 ---	1 ---	5 ---
2 ---	A ---	2 ---	A ---
3 ---	B ---	3 ---	B ---
4 ---		4 ---	
REMARKS		REMARKS	
INSPECTED BY	DATE	INSPECTED BY	DATE

CHART PREPARED BY TECHNICAL COMMITTEE FOR MEASURING CARS

ed, semi-elliptic rear spring. It was recently fully described in these pages. The Thomas six entered by G. G. Buse is not a new 1910 model.

Before the start on Monday morning each entrant will be handed an envelope containing a list of penalties that will be imposed at the final technical examination in Kansas City for sag in the frame, set of the front wheels, set of the rear wheels and springs. Considerable anxiety was occasioned when it was expected by some that the tour would start without the contestants actually knowing the amount of these penalties, but the committee anticipating such held emergency meetings and formulated a complete schedule covering these points, which is as follows:

FRAMES

Sagged up to 1/2 inch.....	No penalty
Over 1/2 inch, up to and including 3/4 inch.....	10 points
Over 3/4 inch, up to and including 1 inch.....	30 points
Over 1 inch, up to and including 1 1/4 inches.....	70 points
Over 1 1/4 inches, or broken frame.....	150 points

SET OF FRONT WHEELS

Up to and including perpendicular.....	No charge
For inclination inward from the perpendicular up to and including 1/2 inch.....	5 points
For inclination inward from the perpendicular exceeding 1/2 inch, up to and including 1 inch.....	15 points
For inclination inward from the perpendicular beyond 1 inch.....	35 points

SET OF REAR WHEELS

Up to and including perpendicular.....	No charge
For inclination inward from the perpendicular up to and including 1/4 inch.....	5 points
For inclination inward from the perpendicular exceeding 1/4 inch, up to and including 1/2 inch.....	15 points
For inclination inward from the perpendicular beyond 1/2 inch.....	35 points

SPRINGS

Unless broken.....	No penalty
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Recent Happenings in New England States

Boston, Mass., July 12—Much interest centered in the figures made public by the Massachusetts highway commission covering the registration of motor cars for the first 6 months of the present year, because when the statement was made early in the season that the total number of cars for the year would approximate 25,000 it was doubted. A rough estimate of the cars now registered in the state places their value at about \$40,000,000. And there has been turned over to the state treasurer now for these first 6 months just \$127,913 as a result of the present flat rate of \$5 a car. The present daily average of applications is eighty-six and the clerks are working day and night to try to catch up with the rush of business. That there has been a great gain this year over last is shown by the following figures:

REGISTRATION

	1908	1909
Motor cars.....	14,547	19,322
Motor cycles.....	1,492	1,872
Manufacturers and dealers.....	359	461

LICENSES

Private operators.....	3,212	4,855
Chauffeurs.....	3,444	5,037
Receipts.....	\$105,201	\$127,913.50

If the new law that goes into effect next January is found to be constitutional it will mean a great deal larger revenue to the state. It has been figured out that the money received for the same number of registrations as above would bring in an income of \$220,000 under the new law. Added to this will be the fines, and all things considered the state would get be-

tween \$400,000 and \$500,000 annually from the motorists.

Ralph Coburn, who drives for the Maxwell branch in Boston, and Paul Roche, who drives for the Stearns and Columbia, in the same city, won notable victories in the superior court of Boston last week. They were driving cars over a stretch of highway where the law always had been 20 miles an hour, but because two houses had been erected, one of which was occupied, the police, in their eagerness, had started to enforce a 12-mile limit. No notification was given motorists, and several of them were gathered in. In the lower court the judge found both men guilty, but, strange to say, a wealthy young woman arrested the same day, on the same charge, and who had previously been arrested for not having her license, was allowed to go, her case having been placed on file. On her other case she was practically acquitted with a fine of 1 cent. This made Coburn and Roche angry, so they appealed the case. When the facts were brought out in the superior court they were both acquitted.

Elmer Jones, of Springfield, was a guest at the Worcester Automobile Club, of Worcester, Mass., last week and told an interesting experience he had while touring in southern New Hampshire. He was passing through Enfield when a horse drawing a hose wagon to a fire balked and refused to go. Jones hitched his car to the hose wagon and dragged the apparatus to a fire, which destroyed a two-story frame building in the town. He received a vote of thanks from the selectmen for his work.

DAY BY DAY PROGRESS OF CARS CONTESTING IN THE SIXTH GLIDDEN TOUR

GLIDDEN TROPHY CARS

No.	Car	Driver	No. of Cyls.	Motor			Carbureter	Speedometer	Shock Absorber	Tires	Magneto	1st day	2d day	3d day
				B.	S.	H-P								
1	Premier.....	Webb Jay.....	4	4 1/2	5 1/2	...	Schebler..	Stewart, Warner.	None.....	Diamond 34x4..	Bosch ..	0	0	0
2	Premier.....	H. Hammond.....	4	4 1/2	5 1/2	...	Schebler..	Stewart, Warner.	None.....	Goodrich 34x4..	Bosch ..	0	0	0
3	Chalmers-Detroit..	Wm. Bolger.....	4	5	4 1/2	40	Mayer.....	Warner.....	Foster.....	Diamond 34x4..	Bosch ..	1	.4	0
4	Marmon.....	F. E. Wing.....	4	4 1/2	4 1/2	32	Schebler..	Warner.....	Hartfords.....	Diamond.....	Bosch ..	0	0	0
5	Marmon.....	H. C. Marmon.....	4	4 1/2	4 1/2	32	Schebler..	Warner.....	Hartfords.....	Diamond.....	Bosch ..	0	0	0
6	Maxwell.....	E. G. Gager.....	4	4 1/2	4 1/2	...	Maxwell..	Jones.....	Ajax.....	Splitdorf.....	Bosch ..	0	0	0
7	Jewell.....	.....	4	4 1/2	5	...	Stromberg	Stewart.....	None.....	Diamond.....	Bosch ..	0	0	0
8	Pierce-Arrow.....	F. S. Dey.....	6	4 1/2	4 1/2	...	Pierce.....	Warner.....	Hartfords.....	Goodrich.....	Bosch ..	0	0	0
9	Pierce-Arrow.....	W. Winchester.....	6	4 1/2	4 1/2	...	Pierce.....	Warner.....	Hartfords.....	Goodrich.....	Bosch ..	0	0	0
10	Glide.....	.....	4	4 1/2	5	...	.....	Stewart.....	None.....	Goodyear.....	Remy....	0	0	0
11	Thomas.....	G. G. Buse, Jr.....	6	5 1/2	5 1/2	70	Mayer.....	.....	Hartfords.....	.....	Bosch ..	0	0	0
12	Midland.....	E. O. Hayes.....	4	4 1/2	5 1/2	...	Kingston..	Jones.....	None.....	Diamond.....	.....	0	0	0
14	White.....	H. N. Searles.....	2	3x4 1/2	5x4 1/2	...	.....	Jones.....	None.....	Diamond.....	.....	0	0	0

*Steam

DETROIT TROPHY CARS

51	Simplex.....	W. A. Woods.....	5	5	5	...	Schebler..	.....	Hartford.....	Goodrich.....	Bosch ..	0	0	0
52	Chalmers-Detroit..	Jean Bemb.....	4	5	4 1/2	40	Mayer.....	Jones.....	.....	Diamond 34x4..	Bosch ..	0	0	0
53	Premier.....	C. Waltman.....	4	4 1/2	5 1/2	...	Schebler..	Stewart, Warner.	None.....	Diamond 34x4..	Bosch ..	0	0	0

HOWER TROPHY CARS

100	Moline.....	C. H. Van Dervort	4	4 1/2	5	...	Schebler..	Warner.....	Four Hartford..	Goodrich 36x3 1/2x4	Bosch ..	0	0	0
101	Moline.....	J. A. Wicke.....	4	4 1/2	5	...	Schebler..	Warner.....	Four Hartford..	Goodrich 36x3 1/2x4	Bosch ..	0	0	0
102	Moline.....	W. S. Gregory.....	4	4 1/2	5	...	Schebler..	Warner.....	Four Hartford..	Goodrich 36x3 1/2x4	Bosch ..	0	0	0
103	Brush.....	D. B. Huss.....	1	4	4 1/2	...	Buffalo....	Warner.....	Brush.....	Ajax.....	None.....	0	.4	0
104	Brush.....	F. A. Trinkle.....	1	4	4 1/2	...	Buffalo....	Warner.....	Brush.....	Ajax.....	None.....	6.8	179.3	0
105	Chalmers-Detroit..	J. Mackesky.....	4	5	4 1/2	40	Mayer.....	Warner.....	Hartfords.....	Goodrich 34x4..	Bosch ..	0	0	0
106	Hupmobile.....	F. Steinman.....	4	3 1/2	3 1/2	16.9	Beeze.....	Stewart.....	None.....	G. & J.....	Bosch ..	0	0	0
107	Maxwell.....	C. E. Goldthwaite	4	4 1/2	4 1/2	...	Maxwell..	Jones.....	None.....	Ajax.....	Splitdorf..	0	0	0
108	Pierce-Arrow.....	J. S. Williams.....	6	4	4 1/2	...	Pierce.....	Warner.....	Hartfords.....	Goodrich.....	Bosch ..	0	0	0
109	Pierce-Arrow.....	C. Schofed.....	6	4	4 1/2	...	Pierce.....	Warner.....	Hartfords.....	Goodrich.....	Bosch ..	0	0	0
110	McIntyre.....	F. Goodwin.....	2	4 1/2	4 1/2	...	Breeze.....	Warner.....	None.....	Diamond.....	Remy....	29	423.7	Out
111	Jewell.....	J. Shimp.....	4	4 1/2	5	...	Stromberg	Warner.....	Hartfords.....	Goodrich.....	Bosch ..	0	0	0
112	Mason.....	R. Snyder.....	2	5	5	20	Schebler..	Stewart.....	None.....	Diamond.....	Splitdorf..	0	0	0
114	Lexington.....	J. C. Moore.....	4	4 1/2	5	...	Schebler..	Warner.....	Hartfords.....	Goodrich.....	Bosch ..	0	0	0

APPERSON SMASHES RECORD IN ROAD RACE



APPERSON CAR THAT WON FERRIS CUP IN SANTA MONICA ROAD RACE, AVERAGING 64.45 MILES PER HOUR

LOS ANGELES, CAL., July 10—The fastest pace ever shown in a road race ever won by an American car was made today by an Apperson Jackrabbit driven by Harris Hanshue, which won the Ferris cup in the 202-mile road race over the Santa Monica 8.4-mile course in which the Kokomo car, an old one at that, averaged 64.45 miles per hour as against the 64.3 of the Locomobile in the last Vanderbilt. The American record is 65.11, made by Wagner in the Fiat at Savannah. The Apperson's time was 3:08:03. Bruno Siebel, driving a Chadwick six, was second in 3:15:30%, and a Stearns was third in 3:19:52 and a Locomobile fourth in 3:21:15. A Stoddard-Dayton also finished.

The small-car race which was run in the afternoon was won by the Chalmers-Detroit piloted by Bert Dingley. The time was 3:38:35, an average of 55.2 miles an hour. The Stoddard-Dayton after a red-hot fight with the winner fell into the second hole and the Buick took third. The Stoddard's time was 3:42:30 and the Buick's 3:49:18%.

Immense Crowd Out

Fifty thousand people gathered around the 8.4-mile course, but as has been the experience in many other events of the kind the smallest crowd was in the official grand stand. It is estimated that fully 3,000 cars were driven to the beach town from Los Angeles.

The races were characterized by their absolute freedom from accidents. There were a couple of minor delays, but not a driver, mechanic or spectator was injured in the slightest extent.

In the heavy-car race the Stoddard-

Dayton which left on the first lap with the Apperson at 8 o'clock was late in getting away and as it came thundering down the stretch approaching the deadly right angle Nevada and Ocean avenue turn the road was obscured by the smoke from the exhaust of the Apperson and Siefert failed to slow down in time. Instead of taking the turn he went straight ahead, ripping off a tire and breaking the extra oil tank. The car was hurried back to the paddock and 11 minutes were lost in making repairs.

The Haynes with Shannon at the wheel had an exciting journey. In the early part of the race in trying to make the Nevada turn too swiftly the car left the course and dashed between two giant palms. A wire fence was torn down, but Shannon guided the car back on the track without stopping. In the thirteenth lap

the car came to grief on this turn. It went off again, but this time was not so fortunate in going between the palms and struck one giant head on. The car quit right there.

The course was beautifully located. The grand stand faced the Pacific, the waves booming on the beach a hundred feet below the palisades. The cars dashed down grade for $\frac{1}{2}$ a mile and then came the right-angle turn which had been slightly banked. For $3\frac{1}{2}$ miles the course was up broad Nevada avenue between two rows of immense eucalyptus and pepper trees. There were slight grades, but not sufficient to retard the progress of the rushing cars. The turn at the soldiers' home had been cut down until it could be taken at a 60-mile clip. A picturesque feature at this point was the guarding of the course by the veterans of the '60s. Down the San Vicente boulevard between the beautiful California gardens and at the foot of the Santa Monica mountains the machines dashed at 80 miles an hour. The turn into the ocean front could be taken at close to a 60-miles-an-hour clip.

Chalmers Late at Start

All appeared at the start ready for the word but the Chalmers-Detroit Forty. The car came up after the first two had been sent away. It was forced to wait until all had gone, thus losing 6 minutes before getting under way. The car went out with a broken frame in the eighth lap. The Rambler, Haynes and Thomas also retired before the finish. The Columbia went out in the third lap and after a long delay returned to the track when the leaders were on their concluding laps.



FRANK FREE IN STEARNS

The Lozier was first to assume the lead, tearing off the first lap in 6:50%. It held the lead safe for seven laps and then gave way to the Stearns, which had been running a close second. All the time the Aperson had been making a consistent progress and in the tenth lap had flashed into the lead, not to sacrifice it again. Siebel drove furiously in the Chadwick to overtake the Stearns in the last few laps and took second place by slightly over a minute.

Small-Car Race

The small-car race was a duel from the start between the Chalmers-Detroit and the Stoddard-Dayton. During the greater part of the race the Stoddard held the lead. In the sixteenth lap it led the Chalmers by 24 seconds. On the eighteenth it lost a tire and when it started running again the Chalmers had secured a lead which it never surrendered. The Buick was running a close third until it lost a tire within four laps of the finish. The tire was replaced in time to maintain the position. The Maxwell, Mitchell and Regal were running at the finish.

LOWELL MAKES RACE PLANS

Lowell, Mass., July 10—The board of governors of the Lowell Automobile Club held a meeting Tuesday evening and went over matters in connection with the races here in September. It was announced that President J. O. Heinze would go to Detroit to attend the meeting of the contest board just before the Glidden tour started. He left here Thursday evening and he carried with him the contracts that were left by Chairman Hower when the latter, together with President L. R. Speare, S. B. Stevens and Harry Knights, of the contest board conferred with him several days ago. These contracts were gone over carefully and changes suggested and President Heinze was given power to make an agreement with the A. A. A. relative to the contests. Some of the motorists interested in the racing game in Boston have suggested that the Lowell club, now that it has the facility for running a race, and has been asked to share the profit with the A. A. A., that the Lowell officials should insist that it be



BERT DINGLEY, CHALMERS-DETROIT, WINNER OF SMALL-CAR RACE

given the Vanderbilt race as one of its contests. It has been pointed out that the Vanderbilt race is dead to all appearances this year, and that if the Lowell club insisted it might get the trophy to be raced for over its course, and once having secured it there would be no lack of entries. A suggestion along these lines will probably be made to the Lowell officials in a few days. The work of building the grand stands will be under way within a week and the matter of building a pontoon bridge across the Merrimac is to be taken up with the war department officials in Boston next week. A bureau will be opened to look after accommodations for visitors and everyone having a room to let will be asked to register it, and after inspection it will be catalogued as to price, etc.

MAY LET IN FOREIGNERS

Philadelphia, Pa., July 12—Having learned a lesson from its recent experiences with the Philadelphia-Pittsburg endurance run and the proposed 24-hour race—the former of which was spoiled and the latter abandoned owing to lack of entrants—the contest committee of the Quaker City Motor Club has taken an early start to insure the success of its second annual 200-mile Fairmount park stock chassis race. Chairman Ross, some

time ago announced, and still fully expects, that none but American cars will compete; but as he has in hand several bona fide assured foreign entries, he is prepared, in the event that home manufacturers fail to send in a sufficient number of entries to complete the list—it is limited to twenty—to let in the foreigners.

No city in the country can boast of a course with the advantages possessed by that in Fairmount park. Within 20 minutes' ride and in sight of city hall and the homes of a million and a half of people, it is of boulevard width throughout nearly all of its 7.8 miles. Fast cars cannot be held up by slower ones—there are very few sections of the course where three cars cannot travel abreast at speed. A thousand and more of the city's police will again guard the entire route in the manner which set a standard for course protection last year. All in all, it offers an opportunity of which American makers, as was the case last year, will not be slow to take advantage. It will be recalled that entries for the 1908 race were so numerous that a waiting list had to be established when the limit was reached; but the opportunity to compete in the presence of half a million spectators occurs but once a year—and that in Philadelphia—and but one of the original sixteen entrants dropped out, the Bergdoll-Welch 50, giving way to the Thomas 70, driven by George Salzman.

It is the consensus of opinion along the row that the Quakers' contest committee is unduly worked up over the possibility of an abbreviated entry list for next October's big race; that there will be no difficulty in filling, even with the limit increased to twenty. But their harrowing experiences with the Pittsburg run and the 24-hour race have slightly shaken the committee's faith in the promises of men. Before those events were officially launched a sufficient number of entries had been verbally assured to make them both big winners. As the time approached for the publication of the entries there were numerous cases of cold feet until a day or so before the events the lists had become ridiculously small.



SIEFERT IN STODDARD-DAYTON TAKING A BAD TURN

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Few Glidden Entries—A Possible Reason

SPECULATION is rife as to why this year's Glidden trophy division has but thirteen contestants whereas last year there were thirty starters, 2 years ago there were forty-six and 3 years ago upwards of eighty. Although there are many causes which have combined in reducing the entry list from year to year one of the big factors in this reduction is the attendant expense in relation to the benefit gained. This year's Glidden, while vastly in advance of previous ones in that it includes a technical examination at the start and another at the finish and penalizes for adjustments made on the route, is deficient in that it does not go far enough. There should be combined with the reliability as shown by the time schedule performance and the penalty list, a speed trial, a hill-climb, an economy test and a tire test. Combining all of these with the reliability phase would give vastly more important and interesting results without adding an additional cent of expenditure on the part of entrants. As it is entrants are beginning to look upon long tours as too expensive and in many cases they are. If at the end of a Glidden tour each contestant would receive a certificate of his car's speed over a measured course with touring load; if each car would receive a certificate showing its time on certain hills whose grade and road surface would be published; if each car would receive a certificate showing its traveling weight and gasoline consumption as well as average speed and ton-mileage consumption; and if each contestant would receive a complete report showing its tire wear, number of punctures, number of blowouts and new casings used there would be some tangible data which could be made use of throughout the entire year and which would amply repay any manufacturer for the time and money spent in the tour. To conduct additional tests of this nature would not place much additional expense on the A. A. A. as it would require but the service of one additional man to look after the economy test, one man would suffice for the tire report and three men could handle the hill-climbing and speed tests, having these on separate days. Thirteen entries for the Glidden is anything but representative of the American motor car industry; fourteen entries for the Hower trophy is equally non-representative and three for the Detroit trophy can be classed in the same category. Where entries are so few there is a reason; if Germany can have 108 in its Prince Henry tour America should have more than thirty contesting cars in its big Glidden-Hower-Detroit run, which now is well on its way to the northwest.

The Enormous 1910 Output

CONSERVATIVE estimates already have placed the 1910 output of motor cars in America at 180,000 and the more sanguine have increased this figure to 200,000. There will not be 200,000 cars built in this country between August 1, 1909, and August 1, 1910; there may be 150,000, but if this figure is reached it will be the outside mark. An output of 150,000 for next year means doubling this year's output; this means that every factory must practically double this year's output, because where new companies have started others have dropped out of the running. Four of five of the big makers of medium and low-priced cars will double their outputs but there will be few of the big high-priced car makers who will turn out twice as many cars next year as they have this season. The big-car makers represent the conservative element of the industry, that branch which is carefully surveying the 1910 selling field and is guarding against a possible over-production and consequent glutting of the market. It is easy to glut the high-priced car field but exceedingly hard to glut the cheap-car field. The great selling field of the future will be the medium and low-priced ones; the high-priced department will continue as heretofore, replacements in it will be important and its ranks will be weekly increased by graduates from the low-priced field. The masses to whom the cheap cars go can absorb a tremendous supply. As yet the motor car is but on the threshold of this vast percentage of the American citizenship and 1910 and 1911 cannot glut this field. It is with the cheap-car maker that the biggest strides for 1910 increase have been made, some having completed factories that are capable of more than doubling this year's output and others having almost equally big additions contemplated or in course of construction, all of which means that the 1910 season, which really has commenced at the present time, will be a record-breaker.

The Indianapolis Motor Speedway

IN a little over a month America will have witnessed the opening of the Indianapolis motor speedway, a 3- and 5-mile speedway built in the outskirts of Indianapolis for motor car use and which gives promise of becoming the Brooklands of America. A track of this nature is what American motoring has been in need of for a long time. As it is at present manufacturers have no place in which they can thoroughly test out the speed qualities of their cars over a safe course and without jeopardizing the lives of the drivers, the lives of the public and not to mention the storm of antipathy because of disregard of road regulations. The Indianapolis speedway will offer a safe testing ground, where every maker at nominal expense can test his new models to his heart's satisfaction and where the public can congregate and witness speed contests on a safe course and with every convenience. The physical aspect of Indiana's speedway is perfect and it is anticipated and hoped that the conduct of the track will be above reproach so that whenever a record is made on the course it will be accepted by the public as an honest record without question. That such a condition is practically assured is borne out by the caliber of the quartet behind the project, Messrs. Fisher, Wheeler, Newby and Allison, all men identified with the motor industry, who have their heart in the work and whose records are such as to warrant a clean ticket. It is expected that the speedway organization will fortify itself with a competent technical committee, one capable of discriminating between a stock chassis and a special one and with sufficient stamina to stand by its conviction. With such and the prohibition of privately-promoted schemes and hippodrome performances the future of the venture should prove most auspicious to the promoters and beneficial to motorists in general. All eyes will be on Indianapolis and the speedway from now until the project is safely launched.

GROWTH OF AMERICAN MOTOR COMPETITION

NEW YORK, July 12—"At no time in the history of the American Automobile Association has there been such a demand for sanctions as this year," declares Benjamin Briscoe, chairman of the Manufacturers' Contest Association. "These sanctions cover every conceivable kind of tests such as reliability tests, fuel economy tests, hill-climbs and track races; both at long and short distances. The mere fact that an unlimited number of sanctions are being granted is not so interesting in itself, but it brings to mind the fact that there is a widespread demand for competitive events. Each local event held is under more strict regulations than its predecessors, which goes to prove that each season's product is better than the last or else the cars could not make the wonderful showing which they do. Never has the self-propelled vehicle been given such rigid tests and exacting mechanical scrutiny. When an event is held the technical committees are made up of men who thoroughly know the car from the motor back to the differential, and the car of today must be mechanically right before it can stand an examination such as is given nowadays.

"It seems to be the desire of the public to see all the competing cars killed off, or, in other words, have rules so rigid that none can finish with a perfect score. This not only means more for the cars themselves if given a high percentage, but it encourages competition inasmuch as that no discredit falls on the maker if his car fails of a perfect score. Misery always likes company, and if there are not any perfect scores or few high percentages, those with lower scores do not regret entering, as would be the case if the rules were so lenient that several finished with no demerit marks.

"With so many events being sanctioned from the Atlantic to the Pacific and from the Great Lakes to the Gulf of Mexico, it is evident that the motor car industry is in an unusually flourishing condition and that the public is interested in and believes that road and track events are good barometers for getting an idea of what the present day car can do in competition with rival makes.

"Judging from the interest taken in the various road and track events, it is evident that the public cares more for fuel and reliability tests than it does for track racing, or at least, track races at short distances. Any car can travel a distance of 5 or 10 miles on a track at a good rate of speed. The public does not buy cars as a rule for speed, but for power and durability. Track events, unless those of 100 miles or such as the 24-hour race, do not bring out the staying qualities and endurance of the machine as do road events such as the Glidden tour.

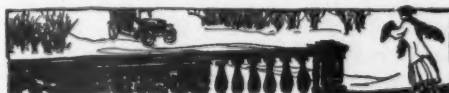
"While thousands will flock to the race track to watch short-distance racing, it is

Benjamin Briscoe Brings Out Salient Points in Connection With Sport in This Country

because of the fascination of seeing the racing cars whirl around the track at a great burst of speed. I doubt, however, if there are many purchases made on the strength of the speed developed in track races. There is no question but that sales are made through results of fuel and reliability contests as a car which can stand up under the exact mechanical examinations, both before and after the test, demonstrates to the public that if they can endure the rigid regulations of the contest they will answer every purpose for touring under general conditions. It seems to me that makers and the public should encourage and support all wholesome road endurance contests as it not only demonstrates to the public what the car can do, but each event teaches the maker wherein he can make his product stronger and more durable."

Track Meet on Coast

San Francisco, Cal., July 7—Between 12,000 and 15,000 people witnessed the meet at Emeryville Monday, which was the first track meet given in California this season. There were not a large number of good entries, and the condition of the track was anything but good. The dust lay upon it inches thick, and at the turns it was especially bad. Under these circumstances it was impossible to make exceptional time. It was a day of Buick victories, three of the races going to the little White Streak. Other winners were the Mitchell, Cartecar, Comet and Detroit electric. It was the first race of electrics ever seen here. The Detroit car, driven by I. G. Perrin, made the 10 miles in 25 minutes 40 seconds. The little Hupmobile, the smallest car ever entered in a race here, sought first honors in the \$1,000 and under class, but was defeated by the Cartecar. The real race of the day was a 10-mile free-for-all. This developed a hard contest between a Buick and the Comet. The Buick got away in the lead and maintained its advantage for three or four laps. Finally the Comet poked its nose out in front and picked up quite a lead. The Buick hung on doggedly, however, and at the three-quarters turn in the final lap of the 10 miles it was anybody's race. At this critical moment one of the Comet's tires went flat and the little Buick shot ahead to victory. A second Buick which had been plugging along in third place quickly took advantage of the Comet's mishap and came over the line following its team mate. Cyrus G. Stafford, an ex-



mayor of Eureka and a lumberman reputed to be worth \$500,000, was killed during the 10-mile contest for cars listed between \$1,000 and \$1,500, being struck by a Cadillac driven by Silva. Summaries:

Ten-mile, electrics—I. G. Perrin, Detroit electric, won; F. Newitt, Fritchle, second; time, 25:40.

Three-mile match race—J. Davis, Mitchell, won; S. I. Robinson, Mitchell, second; time, 5:03 2-5.

Five-mile interclub race—C. Christensen, Reliance club, Buick, won; C. S. Howard, Olympic club, Buick, second; time, 7:44 2-5.

Three-mile, cars selling at \$1,000 and under—Sam Hall, Cartecar, won; D. A. Bonney, Hupmobile, second; time, 4:55 3-5.

Five-mile match race—Earl Cooper, Comet, won; C. West, Gray Ghost, second; time, 6:34 2-5.

Ten-mile, cars listing from \$1,000 to \$1,500—C. Christensen, Buick, won; Frank Murray, Buick, second; time, 8:00.

Ten-mile free-for-all—C. Christensen, Buick, won; Frank Murray, Buick, second; time, 14:07 4-5.

Tire Prices Going Up

Chicago, July 12—Prices of motor car tires will, in many cases, be increased next Thursday, the raise to be approximately 15 per cent. Not all the manufacturers are willing to discuss prices right now, but several of the concerns have prepared a new schedule which is to go into effect on the 15th. Among them are Morgan & Wright, Goodrich, Diamond, Fisk and Continental. Mail inquiries made by Motor Age would seem to indicate that the rates are undoubtedly to be advanced, although some of the concerns state they are not in a position to answer positively. Only one house, Cryder & Co., handling the Kempshall, has declared positively there will be no advance. It is asserted by several that prices on crude rubber and material have jumped so high that better selling prices for tires are imperative. The proposed increase, however, does not send the figures back to where they were before the cut last year.

Columbia Plant Running

Hartford, Conn., July 12—The plant of the Electric Vehicle Co., which has been closed since July 1 save in a few departments to permit the receivers to take an inventory, started up full blast today. H. W. Nuckols, the newly-elected general manager and vice-president of the Columbia Motor Car Co., is most optimistic of the outcome and while not disposed to discuss in detail the plans of the new company assures many refinements in the 1910 production. Most of the creditors already have been paid a dividend of 20 per cent.

Chadwick's Fast Mile

Philadelphia, Pa., July 12—The Chadwick was not given full credit for its work at Wildwood on the 5th, as reported in Motor Age, its star performance not being chronicled. To the Chadwick belongs the honor of having smashed the Wildwood record of :42 $\frac{3}{4}$, made in 1908 by a 120-horsepower Fiat, Zengle cutting it to :41 a week ago Monday in a third trial made with the wind in his favor. This is the fastest American stock car mile of the year.

GENERAL MOTORS CO. BUYS CADILLAC PLANT

DETROIT, MICH., July 12—Announcement was made last week that control of the Cadillac Motor Car Co., of this city, has been secured by the General Motors Co., the amount involved being \$4,500,000. That the \$4,500,000 represents just that amount of profit to the Cadillac stockholders, is the admission which W. C. Leland, secretary, makes. This is due to the fact that the share owners have long since had paid back to them in dividends more than they put into the project. The capital stock of the Cadillac company was \$1,500,000, which at \$100 per share par value, gave 15,000 shares, distributed among the stockholders as follows: William H. Murphy, 3,055 shares; Lem W. Bowen, 2,840 shares; Clarence A. Black, 2,840 shares; Albert E. F. White, 1,607; Union Trust Co., trustee, 1,607; H. M. Leland, 1,340; W. C. Leland, 1,340; Everett A. Leonard, 179; Ernest E. Sweet, 107; Harry H. Pettee, 50; Arthur C. Leonard, 35. The price received by the Cadillac was equivalent to \$300 per share, so according to the above holdings, the stockholders received the following profits in the transaction, in addition to what they have already made in the way of dividends: William H. Murphy, \$916,500; Lem W. Bowen, \$852,000; Clarence A. Black, \$852,000; A. E. F. White, \$482,000; Union Trust Co., \$482,000; H. M. and W. C. Leland, each \$402,000; E. A. Leonard, \$53,700; E. E. Sweet, \$32,100; H. H. Pettee, \$15,000; A. C. Leonard, \$10,500.

There will be no change in the management or factory organization and Cadillac policies will continue to prevail. The management of the company will be in the hands of W. C. Leland, with H. M. Leland acting in an advisory capacity. The Cadillac company employs at the present time in its various department 3,400 skilled mechanics with an output of 10,000 cars in 1909. The company has a capital of \$1,500,000, with the following officers and stockholders: President, Lem W. Bowen; vice-president, Clarence A. Black; treasurer, William H. Murphy; secretary, W. C. Leland; manager, H. M. Leland; A. E. F. White, E. A. Leonard, E. E. Sweet, A. C. Leonard and H. H. Pattee. The Cadillac factory proper is at Cass and Amsterdam avenues, occupying nearly a block. There is also at the old Leland & Faulconer factory, at Trombley and Dequindre street.

All parties to the transaction appeared to be well satisfied, and in commenting on it W. C. Leland expressed himself as follows: "The Cadillac company is just closing the most successful year in its history. From the beginning the aim of its management has been to build cars embodying the highest degree of accuracy, to sell at a medium price. By developing an efficient organization, by instituting the necessary departments, by designing and installing an unexcelled special equipment, this aim has been accomplished. The

demand for this product has been unlimited. The sound, substantial condition of the business in every particular has been very gratifying to its present owners and caused them to deliberate long and seriously before deciding to accept the proposition of the General Motors Co. We believe that this association of interests means enlarged opportunities and that under the new conditions Cadillac policies and Cadillac construction will be carried to a still higher development."

"It will be our aim to maintain the high standard of the Cadillac product," said W. C. Durant, chairman of the executive committee of the General Motors Co. "The good name of the Cadillac is worldwide and we realize its value in the extension of the business which is likely to follow. There will be no change in the management or factory organization and Cadillac policies will continue to prevail. It is a source of much satisfaction on our part that we have been able to secure such a complete factory, a perfect organization and a car with such a fine reputation."

PROTEST AGAINST NEW LAW

Hartford, Conn., July 10—That the much-debated proposed Connecticut motor car law is not favorably received in all quarters is evident from the circular letter just issued by the Connecticut Automobile Association setting forth various contentions, among which are that the proposed measure is unjust to the fraternity in the matter of taxation and as a whole it is so complex that a lawyer cannot make it out. It is the consensus of opinion in this direction that it would be preferable to retain the law of 1907, which now is in force. This is substantially what various members of the legislature have hinted all along. It is the opinion of a certain faction of the state association that the law is inadequate and it would be well to prevail upon the chief executive to veto the measure and assist in keeping the law of 1907 in force another 2 years. It is quite to be expected that there should be a difference of opinion as regards the true worth of the proposed bill. However, the fact remains that the motorists have become so numerous in this state that their power is recognized. It is hinted by one high up that they will come pretty near getting what they are looking for.

TWO KILLED AT MONTREAL

Montreal, July 9—A double fatality was the result of the meet held here today at Blue Bonnets track, C. K. Bachelder and John Twohey, driver and mechanic respectively of a Stearns in the 10-mile open, being killed. The car ran off the track in the back stretch and the two men were caught in the wreckage. Twohey died almost immediately, while Bachelder expired shortly after. A burst tire is credited with having caused the mishap, although those

who claim this are not certain. Previous to the accident the racing had been spirited. Ralph de Palma in the Fiat Cyclone won the time trial at 1 mile in :54. Burman in the Buick turned it in :57%. In the 3-mile race for stock cars selling at \$1,200 and less L. D. Robertson in a Ford beat Timberlake in a Buick by nearly 3/4 mile. Burman in the Buick won the 5-mile race in the \$2,001-\$3,000 class in 5:15, with L. D. Robertson, Buick, second. Robertson won the \$3,001-\$4,000 class at 5 miles, in 6:12%, driving a Buick. Powell in a Foxall was second. Burman in a Buick with 45 seconds handicap, won the 10-mile handicap in 11:52%, with Hugh Hughes in an Allen-Kingston, scratch, second. Robertson was third. This was the race in which the fatal accident occurred. Despite this the program was finished. Max Daoust in a Franklin won the sixth event, a 5-mile for stock cars \$4,001 and over in 8:50. De Palma in the Fiat took the 5-mile free-for-all. The windup was a 25-mile for cars of 60 horsepower and under, flying start, the winner being Burman Kingston second. The time was 29:29%. in the Buick, with Hughes in the Allen-Kingston second. The time was 29:29%.

MUNSEY PROMOTING TOUR

Washington, D. C., July 10—A big reliability contest from Washington to Boston and return is being promoted by the chain of newspapers owned by Frank A. Munsey, of magazine fame. It will be known as the Frank A. Munsey tour and is scheduled for September 22-29. The event is attracting considerable attention from manufacturers, while the dealers in the several cities where Munsey newspapers are published are of the opinion that the Munsey tour will be of much value in exploiting the 1910 models. The tour has been sanctioned by the A. A. A., and entries are now being solicited by the Munsey representatives. Two entries were secured in Detroit on Friday, the first one being a Chalmers-Detroit, which will be piloted by Joe Matson, winner of the Indiana trophy. The Munsey tour will mark the debut of the 1910 Chalmers-Detroit. A 1910 Hudson roadster also has been entered by the makers of that car. The Chalmers-Detroit flag-to-flag car has been secured to pathfind the route and will be sent over the road some time this month with Billy Knipper at the wheel. The route as proposed is Washington to Paltimore, to Philadelphia, to Milford via the Delaware Water Gap, to Albany, to Springfield to Boston. The return trip will be via New York, Philadelphia and Baltimore. As this will be the first important motor car event to start and finish in the national capital, it is expected to attract more than ordinary interest on that account. Furthermore the Munsey tour will fill the eastern gap caused by the running of this year's Glidden tour in the west.

FIRST CONGRESS OF ROAD BUILDERS HELD

SEATTLE, Wash., July 7—The first American congress of road builders convened in Seattle Monday. A notable assemblage of road builders, engineers and road experts was present at the first convention of the sort ever held in the United States. Nearly every state in the union was represented among the seventy-five delegates who registered for the convention. In addition Great Britain has a representative in the person of E. Purnell Hooley, county engineer of Nottingham; Al. F. Knudsen, of Honolulu, was Hawaii's representative. Governor Hay spoke briefly, outlining the importance of good roads in the upbuilding of the community and bade the visitors welcome to Seattle and the exposition. Judge C. H. Hanford spoke on "Objects and Purposes of This Congress."

"The object of this congress, the first of its kind to be held on the continent of America," he said, "is to serve as a medium for the interchange of ideas and the dissemination of knowledge. It is the medium through which some of the greatest practical thinkers of our time are to speak to the whole world on the important subject of road building." Judge Hanford in conclusion paid a high tribute to Samuel Hill as the man who had realized and made possible much of the good roads of Washington.

E. L. Powers, of New York, was the first speaker on the morning program with a paper on "The History of Road Building." He traced the growth of roads from the first buffalo paths and the trails made by the aborigines in their journeyings, to the present improved system of highways.

After an address by M. O. Eldridge, of Washington, D. C., on the relative merits of "earth, sand, clay and gravel roads," Andrew Rinker, of Minneapolis, read a paper on "Wood Block Paving." Mr. Rinker reviewed the history of creosoted wood block paving, confining his discussion to that type. He did not consider Washington fir so well adapted to this pavement as Georgia pine, tamarack and Norway pine. The first blocks tried in the city of Indianapolis were Washington red cedar. Speaking generally of the wood-block paving, Mr. Rinker said:

"The advantages in the adoption and use of this kind of pavement are that it is, comparatively speaking, a noiseless pavement, it is easily kept clean, the wear and tear on vehicles is reduced to a minimum, it is antiseptic on account of its impregnation with creosote oil and its traction resistance is light. Some of the objections that we hear against it are that if properly laid with hardwoods it becomes slippery and that it buckles or heaves on account of expansion. As to these arguments only experience in connection with the laying of nearly half a million square

yards of it during the past 6 years is a sufficient justification for the statement that such conditions are not common in Minneapolis. When this kind of pavement is slippery it is due to weather conditions, sleet and ice that have the same effect on other kinds of street and pavements, and the only raising of blocks from their beds is along the rails of street railways, where the water has penetrated and frozen."

Before the afternoon session the delegates visited a strip of sample pavement and road surface prepared for the convention close by the Northern Pacific tracks, where there is in preparation a sample of wood block, asphalt and macadam and vitrified brick pavement.

When the congress reassembled Charles Evan Fowler, of Seattle, read a paper on bridge-building which was illustrated with stereopticon views. Mr. Fowler paid particular attention to the architectural beauty of bridge building, discussing this feature in connection with the various engineering problems.

Seattle's city engineer, R. H. Thompson, read the paper prepared by Professor Spencer B. Newberry, of Ohio, on "Portland Cement, Its Manufacture and Use." The paper dealt principally with the technical qualities of Portland cement and its ability to stand pressure and strain. Mr. Thompson disagreed with the author of the paper in a number of instances and its reading was followed by a general discussion of the use of cement. Around the durability of hazzam paving the debate centered and it was only by adjournment at 5:30 that Judge J. T. Ronald, chairman of the congress, was able to end the discussion.

OIL FOR CONNECTICUT ROADS

Hartford, Conn., July 12—Connecticut State Highway Commissioner James H. MacDonald has purchased a large quantity of crude oil and distributing apparatus and in the very near future will spray sections of the main heavy traveled highway in an endeavor to render the roads of the Nutmeg state dustless and fit to tour over. The commissioner thinks well of the oiling proposition, if properly done. When it is realized that it costs approximately \$5 per mile to water a macadam highway and the treatment is of but temporary benefit only, it is obvious that two or three coats of oil judiciously applied in the course of a season would prove far superior. If, after this exhaustive trial of the oiling system, the results are not eminently satisfactory some other mode of dust-laying probably will be resorted to. Tar is an admirable dust-layer, but little of it has been used in this state as yet. The best illustration of the utility of a well-tarred road is afforded by the stretch about the capitol grounds used almost exclusively by high-powered cars. This road was treated two seasons ago and the road today for the

most part is in excellent condition and practically dustless at high speed. The commissioner is carrying out the summer plan of road betterment as fast as possible. Two stretches in Manchester and one of 3 miles along the old Albany turnpike through the town of Bloomfield are now receiving attention. The ferry road from Saybrook to the Lyme ferry, one of the worst stretches in the state, will shortly be improved. A fine stretch over Weatogue mountain, one of the most picturesque sections of the state, has been improved recently. A long stretch through the town of Milford, a portion of the uncompleted link between the New York and Massachusetts state lines and another short stretch between Greenwich and Stamford will soon be in first-class condition. An excellent gravel road of 3 miles has just been completed in the town of Windham. The gravel roads of the state seemed to have withstood motoring travel very well indeed, as, for instance, that portion between the towns of Norwalk and Wilton which is now in good condition, though it has been built 12 years. A good portion of the 7-mile Berlin turnpike road has been improved. Three contractors are now at work on it.

SPEEDWAY CARD OUT

Indianapolis, Ind., July 12—The program for the opening races on the Indianapolis motor speedway, which will be held August 19, 20 and 21, has been announced. The events will be under the rules of the A. A. A., under which no more than three cars of any one make can be entered in a single event. Each winner of a first prize will be given a gold medal and each winner of a second prize a silver medal, in addition to the more valuable trophies offered. Contesting cars will be given the privileges of the speedway garages for ten days preceding the meet. The program, as announced, is as follows:

THURSDAY

Two hundred miles for the Prest-O-Lite trophy.
Five miles; stripped chassis; class 4; 161 to 230 cubic inches.
Ten miles; stripped chassis; class 3; 231 to 300 cubic inches.
Five miles; stripped chassis; class 2; 301 to 450 cubic inches.
Ten-mile, free-for-all handicap, open to all cars entered at meet.

FRIDAY

Five miles; stripped chassis; class 3; 231 to 300 cubic inches.
Ten miles; stripped chassis; class 2; 301 to 450 cubic inches.
Record trials to lower world's record for track. Each car will be allowed to make two trials; electrically-timed.
Ten miles for cars of class 1 up to 600 cubic inches.
Fifty miles for class 4; stripped chassis; 161 to 230 cubic inches.
Five miles; free-for-all handicap; open to all cars entered at meet.
The national trophy contest.

SATURDAY

Record trials up to 10 miles, free for all cars.
Free-for-all handicap race, open to all cars entered in meet.
Five-mile consolation, open to all cars that have not won first prize at meet.
Twenty-five mile free-for-all, open to all cars.
Indianapolis motor speedway trophy; 300 miles.

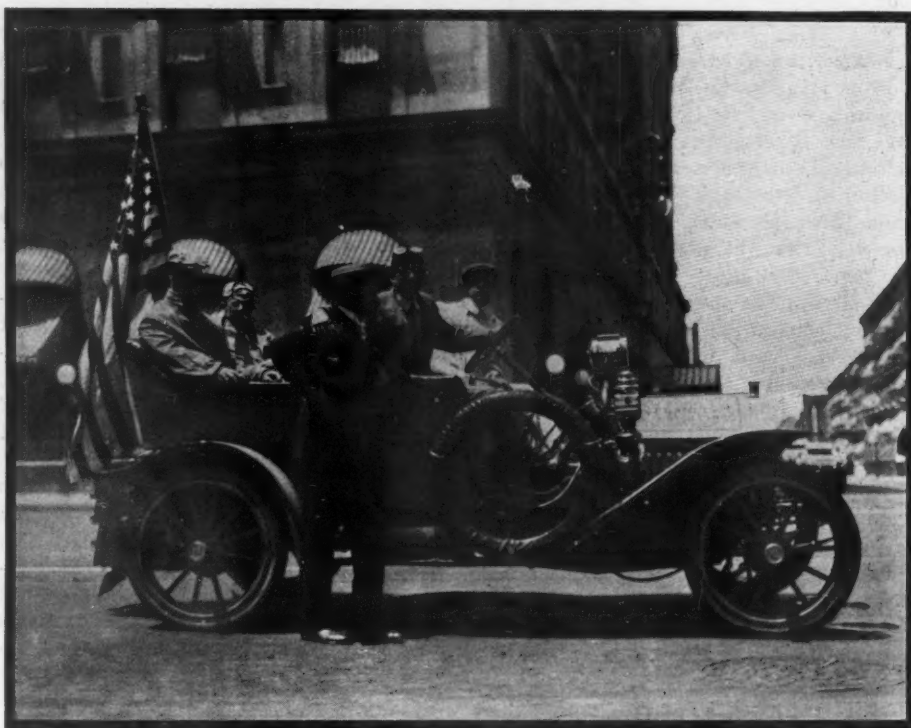
LOG OF REGAL'S TRANSCONTINENTAL JAUNT

CHICAGO, July 3—George D. Wilcox, in command of the Regal, which is making a transcontinental journey as a demonstration test of the 1910 model, arrived in Chicago late last night and left this morning on the western leg. The car, 7 days out of New York, had covered 1152 miles, running on schedule each day, the daily average being 164 1-2 miles. So far the trip has practically been free from tire trouble, there having been but two punctures, both in the same tire, the wheels being shod with Empires. After a night's rest here, the Regal started at 11 o'clock from Motor Age office for Clinton, Ia. Since the Regal left New York, Wilcox has been keeping a log of the adventures of the party—a cheerful, joyful journal that shows the experiences of transcontinental tourists. The New York-Chicago story is as follows:

George Wilcox's Log

Poughkeepsie, N. Y., July 5—Five minutes to 12 by Starter Batchelder's watch in Times square, New York; 5 minutes for a hasty contemplation of the task before us. It loomed larger at the moment than ever before—to cross the American continent in 30 days, rain or shine, to overcome physical conditions once deemed unsurmountable, to climb mountain ranges, ford rivers, leave desert wastes of sands, to travel 4000 miles and to accomplish all this in that 2000 pounds of steel and rubber that stands purring at the curb. The usual crowd, alike the world over, stands open-mouthed around us. Questions of all kinds are hurled at the passengers, and as the time draws near for the word, our hearts beat just a little faster in realization of the fact that we were about to be off on that long journey.

"Go and good luck," says the starter, the motor gives a roar, in goes the clutch, our flags stream out in the breeze, and up Broadway behind the pilot car we roll under cloudless sky and bright sunshine.



START OF TRANSCONTINENTAL TRIP FROM NEW YORK

Through Yonkers and on to Ossining, we glide through rolling wooded boulevards, and on to Peekskill to the Hotel Raleigh for lunch at 2 P. M. with our pilot car. Bidding our guides good-bye at this point, we head north along the Hudson and after a beautiful drive of 35 miles reach Poughkeepsie and the Nelson house at 5 P. M., 76 miles nearer San Francisco than when we started. The Regal Plugger has been tried to-day and not found wanting, and we sleep tonight with every confidence in its ability to land us at the Golden Gate on schedule time. Tomorrow—well, that's another story and another day.

Second and Third Days

Rochester, N. Y., July 7—When the captains of industry grabbed every avail-

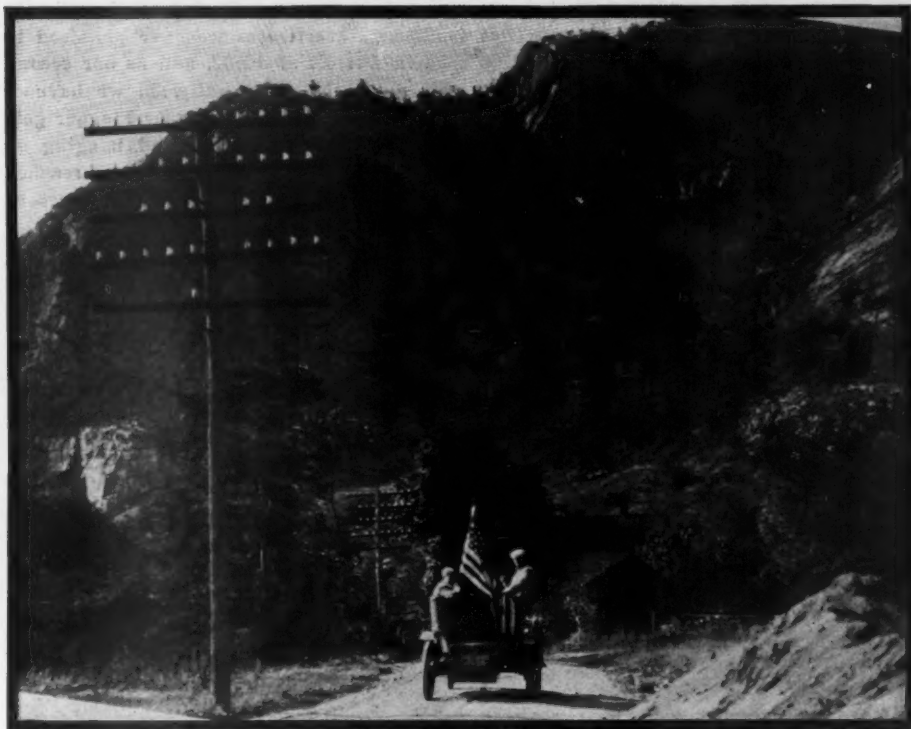
able site for summer homes along the Hudson they acted with that foresight in securing a corner on the beautiful in nature that they have exercised in matters financial. The ride from Poughkeepsie to Albany conclusively proves this to anyone, and to us, the crew of the Plugger, it compensated for the 5 o'clock summons of the bell boy to breakfast in a most satisfactory manner. Six o'clock found us speeding up the river road between miles of magnificent trees with frequent beautiful views of miles of river ahead skirting the base of the Catskills. The morning is cold. Overcoats come into use and frequent attacks on the hot coffee stowed in the Thermos bottles are resorted to. Notwithstanding the fact that we had eaten at 6, 8 o'clock finds Snowbill Bill demanding more food and we draw up in Hudson at a coaling station and find that we can all eat again with relish. Off again at 9, we hit her up over the superb roads and 10:30 finds us rolling over the bridge at Albany, facing westward and all seem to realize for the first time the task before us before the coast is reached.

Approaching Albany from the east or south, the capitol looms up as about the largest object in the landscape. Twenty-two million dollars, its cost, ought to make some bump on the scenery and it does. We lunch in Albany, answer innumerable questions from friends and strangers, and after looking over things mechanical on the Plugger we leave by the way of the new state road for Utica, 94 miles away. At Schenectady we cross the Mohawk river and follow up its beautiful valley over a fair country road to Amsterdam.



REGAL AND ITS CREW JUST OUTSIDE ALBANY

Here we again strike the state road and good going to Fonda. Our 3 by 6 American battle flag fluttering astern brings cheer in every village, and we hope to carry it through to the coast with us. We startle the good people of Little Falls with the Plugger's rattling exhaust. We have no muffler. At 5 P. M. and after a delightful run up through Herkimer and over another patch of new state road we make Utica and supper, making a total mileage for the day of 175 miles—good, bad and indifferent roads evenly mixed. Seven o'clock on Wednesday morning finds us enroute to Rochester. We have a new face in the crew today. Mr. Allen of the Empire Tire Co., who accompanied us from New York, having reached the end of his division at Utica, was replaced by Mr. Smith, of the Buffalo branch of the Empire Co. He accompanies us to Erie, Pa. We regretted to lose Mr. Allen, but as we had the pleasure of advising his company in a wire, "No tire trouble, not even a puncture," he returned happy. The Regal Sales Co., of Syracuse, had planned to meet us at Fayetteville, N. Y., 8 miles out with a Regal escort and it certainly did it. Its advance car reached us at 11 P. M. last night at Utica, rousing us out of bed to say "hello" and then rushed back the 50 miles to report us on our way. Eight miles out of Syracuse Regals galore met us, and how they made the dust fly on us, who brought up the rear, as a car being piloted should. Of course we couldn't get away from such good fellows shortly and as a consequence it was 1 P. M. before we finally left the gates in Syracuse with four pilot cars for Auburn, 26 miles away and 100 miles to Rochester. Everyone put on a full head of steam to make up for lost time, and 2 o'clock saw us at the Regal agency in Auburn. Half an hour spent in explaining the new model, our route and schedule and then away for Rochester. One by one our escort bid us good bye, Godspeed and good luck, some of them following us for 40 miles or more. Through Phelps, Clif-



PICTURESQUE SCENERY FOUND NEAR UTICA, N. Y.

ton Springs and Victor we made such good use of the roads that 6 o'clock saw us in Rochester. Result for the afternoon, 4 hours and 30 minutes driving time, seven stops to say good bye, 100 miles, car running fine and fit and again not even a puncture. Tomorrow for Erie, Pa., distance 173 miles.

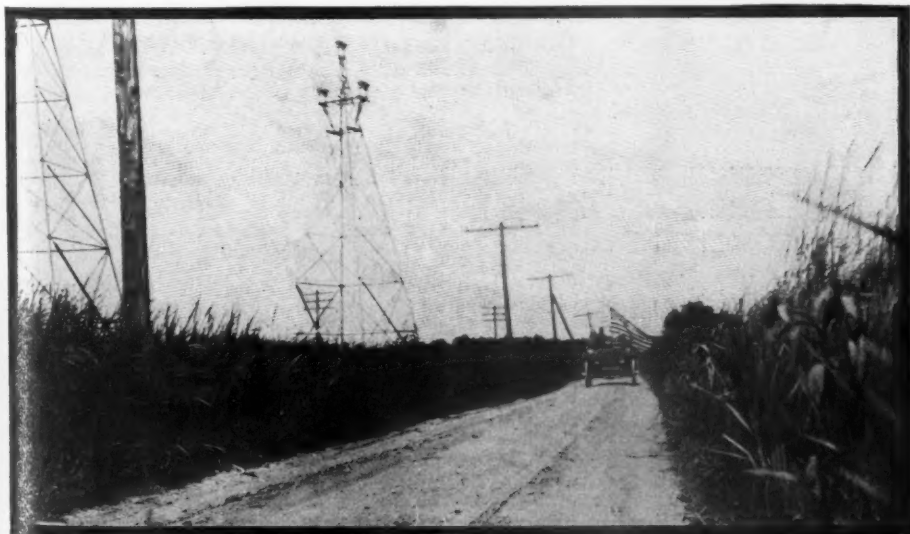
From Rochester to Detroit

Detroit, Mich., July 10—Mine host of the Powers hotel in Rochester in his desire to give us the best in the house so gorged us with good things and roomed us so comfortably that despite the continued calls of 5 o'clock we failed to respond and as a consequence the Plugger did not get started westward until after 7 A. M., but with a good state road under us we ate up the first 20 miles in just 40 minutes and reached Batavia, 36 miles on the way to

Buffalo, at 8:30. Thirty minutes for breakfast was taken here and we were off again for Buffalo, 40 miles away. As 20 miles of this road is also state road we lost no time in burning it up, and reached the Regal agency in that city at just 10:30.

Buffalo was no exception to this rule, and it was not until afternoon when "All aboard to Erie" was announced, and with a Regal pilot in advance we got under way. The road from Buffalo to Erie via of Silver Creek and Westfield is good, bad and indifferent, but at this time of the year, as compared with its condition at the time of the Snowball Limited run, it is a boulevard. We pounded along steadily, first along the beautiful shore road skirting Lake Erie, and then through the vineyard section near Westfield, passing a number of cars going our way and coming out victorious in several sharp battles for the lead with larger cars, none of which were anxious to eat our dust. One is more greatly impressed with the magnitude of the motor car industry by touring at this season of the year than in any other way. Tourists by the hundred frequent the roads and it seems as though we had encountered an endless procession of cars ever since leaving New York. Each party gives us a cheer as they read the Plugger's signs and also add another layer of dust to our complexions, which by this time resemble boiled beets, as we are just in that stage of sunburn which gives all beholders the impression that one has led a dissipated young life.

We reached Erie without accident or incident at 4 P. M., 100 miles out of Buffalo and 175 miles for the day, and bid good bye to Howard Smith, our Empire tire man and observer, and take on Edwin



FAMOUS MONTEZUMA MARSH ON NEW YORK-CHICAGO TRAIL

Horsey of the Cleveland Empire branch, who is slated to go through to Detroit with us. We go to bed early, anticipating the 225-mile run to Toledo the following day and I am afraid we did not respond very graciously to the bell boy's call at 3:30 A. M.

By the liberal application of ice water to some of our crew who desired to linger in the hay we managed to get going at 5 A. M., and after a pleasant run of 100 miles through Ashtabula, Geneva and Painsville reached Cleveland city line at just 9:45, the speedometer reading 93 miles, which is fair going up hill and down, taking out 1 hour for breakfast at Ashtabula. We supposed we had been photoed a few times before we reached Cleveland, but when we met the escorting Regal cars on Euclid avenue such a battery of cameras as we had to face. Our modest crew nearly expired in the hot sun posing for a picture for each one. We were lined up and stood up singly and collectively, and after it was all over we found we had consumed an hour's time.

Every one seemed glad to see us in Cleveland, but perhaps they were gladder to see us go, for they gave an enthusiastic cheer as we got away at 12 o'clock and beat it out Detroit street enroute to Toledo. We sailed along to Elyria, 26 miles, in great shape but the next 26 miles into Norwalk, which we reached at 3 P. M., was a different story. The sand roads in this section are none too good and the continued dry weather has converted them into as hard a piece of going as one would care to tackle.

As the speedometer turned 708 miles from New York we feel that sickening thud in the left rear wheel that always means puncture, and for the first time since leaving Times square our tire man had a job. We are off again in 20 minutes and reach Clyde at 4 P. M.

The roads between Clyde and Toledo are a problem hard to solve. At one moment you are wallowing through chuck holes deep enough to serve as the last resting place for an elephant, the next you are skimming over a floor-like surface. Perhaps the contrast is made so that the traveler may appreciate good roads or have a smooth place in between holes to repair the broken springs he may acquire in the last hole.

We reached Toledo at 7 P. M., somewhat hungry and more dirty. We are interviewed, questioned and agreed with and given advice until 10 and then we sleep, until at 5 we again face the day's trip, the shortest of the run to Detroit, 65 miles away. Seven o'clock sees us in action, but unfortunately on the wrong road and we return after 5 miles tour of the city to the business section that we may get the right road dope.

Every one curses the Toledo to Detroit road, and so do we. It's worse than bad, it's rotten. There are more poor bridges, chuck holes, sand and general road dis-

turbance on this trail than the law should allow. Nevertheless we have promised to be in Detroit at 10:30, and as our second start for the day is at 7:30 we haven't any time to spare. The poor Plugger gets an unmerciful thumping and banging on this stretch, but despite this we reached Fort street in Detroit and the escort at 10:20, and after a general all around hand shake, a short account of the trip, including the usual official photograph we reached the Pontchartrain at 11 A. M., 850 miles out of little old New York, and complete the first one-fifth of our transcontinental journey.

From Detroit to Chicago

Chicago, July 13—No one is in a better position than your Glidden tourist of past experience to appreciate the task involved in a transcontinental run, and for this reason perhaps, we were accorded a great send-off from the Pontchartrain in Detroit at noon on Sunday by the entire assembly of Gliddenites as Charles Glidden gave us the word to "Go" and good luck. Out Michigan avenue to the Ypsilanti road, escorted by a long line of Regal cars, we rolled eating clouds of the escorts' dust and finally as the open country is reached.

We plugged into Ypsi, 31 miles, at 1:30 and encountered our first rain since leaving New York. It is welcome indeed, although of short duration. On through Ann Arbor and up and down the sand hills which in some instances are corks, into Jackson we go, arriving at 4:30. At the Otsego hotel we are surrounded by a great crowd, all keen for information as to our trip and full of talk pending the arrival of the Gliddenites Monday.

We are not surprised on arrival in Chicago Monday night to read of the penalizations on this first stretch of the Glidden tour. It is hard going and high speed is dangerous, as the hills are deep and slippery with sand. After leaving Jackson the roads improve to Albion and Marshall, when we light our lamps and hit her up for Battle Creek, which we reach at 8:30

and enjoy a fine night's rest at the Post tavern. We are off at 7 a. m. from Battle Creek after a hearty breakfast which includes samples of everything in the cereal line from Bala Hay to Grape Nuts, as the hotel proprietor is the father of this line of fodder which has made Battle Creek famous. We reach Kalamazoo at 8:45, 26 miles from Battle Creek, and turn our first 1,000 miles from Broadway just outside the little town of Galesburg, Mich. Stopping at the Burdick, we leave a few messages for some of our friends on the Glidden tour, who predicted that they would catch us here, and are off to Chicago via Dowagiac and South Bend. The roads improve somewhat after leaving Niles and we make good time into the Bend, where we grab a hurried lunch, replenish the gas tank and are away for Valparaiso to meet our Chicago pilot. Fifty miles of good stiff driving bring us into Valparaiso in just 2 hours and we join our Chicago pilot, Mr. Martin, here. Without stopping we go on through Hobart to Hammond, and arriving there cannot resist the temptations of steak and potatoes, which so engage our attention that it is 9:30 p. m. before we again head Chicagowards.

Everyone knows the difficulties encountered in getting into town in this city, but thanks to our pilot we avoid the bottomless pits and grade crossings to a large extent, arriving tired but happy at the New Southern at 10:45, total mileage for the day, 204, and from Detroit, 329 miles, accomplishing in a day and a half a schedule set down for 2 full days by the Gliddenites, and that, too, with a car heavily loaded for a transcontinental trip. Despite the hour we get a great reception on arrival and get away to the "feathers" under protest at midnight. To sum up the first leg of the journey: Mileage from New York via Detroit, 1,152.9; trouble, none; schedule followed on time; time, just 7 days; average per day, 164½ miles. We are off for Clinton this morning and begin to feel that we are facing the wild and woolly west from here.

RECORD OF CARS IN BUFFALO'S 1-GALLON ECONOMY TEST

CLASS A, CARS SELLING \$1,000 AND UNDER						
Name of car	H.P.	Weight, Bore	Type	Driver	Mileage	Score
Reo	10-12	2,016	Runabout	G. G. Parkhurst	35.4	71,366
Brush	8	1,432	Runabout	A. Dessault	41.2	58,998
Hupmobile	16	1,600	Runabout	D. Walker	36.8	58,880
Buick	18	2,190	Runabout	W. F. Lacy	26.1	57,129
Maxwell	10	1,781	Runabout	L. P. Chittenden	37.6	56,280
Reo	10	1,968	Runabout	C. L. Weiss	28.4	55,891
Ford	15	1,544	Runabout	C. H. Williams	30.9	47,709
CLASS B, CARS SELLING FROM \$1,001 TO \$2,000						
Franklin	18	2,948	Touring car	S. G. Averell	46.1	165,902
Oakland B.	20	2,360	Runabout	H. Bauer	36.7	86,612
Overland	30	3,216	Baby tonneau	A. Popenberg	26.5	85,224
Cartercar	24	3,190	Touring car	L. Engel, Jr.	21.8	69,542
Cadillac	30	3,380	Semi-tonneau	M. P. Baker	20.2	68,276
Inter-State	35	3,411	Touring car	F. A. Sherman	18.7	63,785
Buick	30	3,006	Touring car	C. L. Whiting	15.6	59,373
Maxwell	30	3,124	Baby tonneau	C. F. Monroe	17.7	58,294
Rambler	18	2,861	Surrey	W. S. Longnecker	17.1	48,923
Overland	30	3,025	Runabout	J. W. Frey	Did not finish	
CLASS C, CARS SELLING FROM \$2,001 TO \$3,000						
Rambler	34	4,023	Touring car	F. C. Carter	19.3	77,644
Thomas	40	3,966	Touring car	H. S. Garton	16.2	64,249
CLASS E, CARS SELLING \$4,001 OR OVER						
Mercedes	28	4,330	Touring car	M. J. Steimbrenner	16.8	72,744

RECORD IN FUEL ECONOMY MADE BY FRANKLIN

BUFFALO, N. Y., July 8—Excitement and interest of an unusual character marked the event of the 1-gallon mileage contest run on a ton-mile basis, which was held here yesterday under the auspices of the Automobile Club of Buffalo. Twenty cars competed. The cars were weighed in with the passengers aboard, after which 1 gallon of gasoline was poured into the tank of each car. The Franklin made the greatest mileage on its gallon, going 46.1 miles. The field, however, was divided into divisions as well as classes, the winners of which were as follows:

Class A, open to cars selling for \$1,000 or under—Division 1—First, Reo; driver, Parkhurst. Division 2—First, Reo; driver, Weiss.

Class B, open to cars selling from \$1,001 to \$2,000—Division 1—First, Franklin; driver, Averill. Division 2—First, Cadillac; driver, Baker.

Class C, open to cars selling from \$2,001 to \$3,000—Division 1—First, Rambler; driver, Carter. Division 2—First, Thomas; driver, Gorton.

Class E, open to cars selling for \$4,001 or over—First, Mercedes; driver, Williams.

The Franklin was the star of the event, and it is claimed Averell established a new world's record when with a combined car and passenger weight of 2,948 pounds he went 46.1 miles with 1 gallon of gasoline. The car is one of the first Franklins of 1910 model. The Franklin had 135,902 points, and the best that any one of its eighteen competitors which finished was able to score was 86,612. The average of these eighteen contestants was 64,495 points, or 71,407 less than the Franklin figure, which more than doubled it. The Franklin's total mileage of 46.1 exceeded by 20.4 miles, or 79 per cent, the average of 25.7 miles the other eighteen scored. The Franklin's car and passenger weight of 2,948 pounds exceeded by 161 pounds the average weight of its competitors, which was 2,787 pounds. The weight for all entries was 55,904 pounds; the total mileage of the nineteen which finished was 509.1. The lowest mileage was 16.8, made by the big Mercedes, and the lowest score 47,709.

The Franklin was an 18-horsepower touring car, which went through the competition without road stops or trouble. The course was slightly rolling, with grades of about 1 per cent, and on the outward trip there was a slight head wind. The roadway was first one of good asphalt, then in succession brick of indifferent quality, badly worn macadam, a stretch of good macadam followed by one of bad macadam full of holes and crossed by high crosswalks, and finally a fair piece of state road. In addition to capturing the general contest trophy the Franklin won the trophy for its class, which was for motor cars ranging in value from \$1,001 to \$2,000, with the Oakland runner-up.

It was in a car of the same type and power, but of 1909 model that Mr. Averell made the previous record last spring in a contest held on Long Island roads by the New York Automobile Dealers' Association.

Defeating nineteen rivals, the Franklin scored 103,104 points, carrying 2,880 pounds 35.8 miles, this being 51.5 ton-miles. The Franklin in addition holds and has held for 3 years the 2-gallon world's record for gasoline economy. It was made May 5, 1906, in a contest held by the Automobile Club of America upon a Long Island course. The car which established the 2-gallon record was one of 12-horsepower, and it carried a weight of 1,500 pounds 87 miles. Only seven of its opponents were able to go as far as 50 miles. To show that there was no luck about the result the car was sent over the route on the following day and then made 95 miles on its allotted 2 gallons.

The course was from Main and Goodell streets, out Main through Williamsville to the hill just this side of Clarence and back, a distance of 33 miles. President H. G. Strong, of the Rochester Automobile Club, acted as starter, and got the cars away in good order shortly after 2 o'clock. H. A. Meldrum acted as referee. The entrants were preceded by cars containing the officials. Several of the cars covered the entire distance and doubled back nearly half the journey. Only two mishaps occurred. An Overland driven by John Frey got a puncture on the return trip several miles east of Williamsville and could not repair in time to finish within the time limit. A Cadillac driven by Cyrus Lee was hopelessly out of it when a part of the gasoline was spilled just before the start. None of the motor cars attempted a higher speed than 15 or 18 miles an hour and every advantage was taken of the down grades to husband the supply of fuel. The points scored by each entrant were figured by multiplying the distance covered by the

weight of the machine and its passengers, the car with the highest number of points in its respective division being declared the winner. The affair was well-handled and was a big success.

TRACK MEET AT SPOKANE

Spokane, Wash., July 5—What is claimed to be a world's record for a stock car on a ½-mile track was established at the Spokane interstate fair grounds this afternoon when Driver Harry Bell sent Arthur M. Cowley's 40-horsepower Stoddard-Dayton around the track in 1:16 in the third mile of a 5-mile race. The Spokane Motor Club's program was a complete success, barring the intervention of weather, which forced the calling off of the last race, a 10-mile dash. The time was remarkably good throughout. An 18-horsepower Buick entered in the \$1,250 class covered 1 mile in 1:23%. J. A. Stoner drove a stock Stoddard-Dayton a mile in 1:16%, and came within ¼ second of Bell's time for the full 5 miles. The surprise of the day was the defeat of the Locomobile by J. A. Stoner's Stoddard-Dayton. Summary:

Class A-1, for cars costing up to \$750, 5 miles—Dr. R. A. Hahn's 20-horsepower Ford won; Dr. Tennant's 20-horsepower Ford, second; time, 9:20.

Class A, for cars costing up to \$1,250—H. Alderson, 18-horsepower Buick, won; A. L. Rice, 20-horsepower Overland, second; time, 7:17 1-5.

Class D, cars costing up to \$3,500, 5 miles—Harry Bell, Stoddard-Dayton, won; G. N. McCarthy, Oldsmobile, second; time, 6:32.

Class D, cars costing up to \$3,500, 5 miles—J. A. Stoner, 40-horsepower Stoddard-Dayton, won; G. N. McCarthy, 60-horsepower Locomobile, second; time, 6:32 3-5.

Class C, cars costing up to \$2,500—J. Stenstrom, 30-horsepower Chalmers-Detroit, won; A. L. Cronin, 30-horsepower Maxwell, second; time not secured.

Class E, cars costing upward of \$3,500—G. N. McCarthy, Locomobile, won without competition.



AVERELL IN FRANKLIN, MAKER OF NEW FUEL-ECONOMY RECORD

BOOMING GOOD ROADS CAUSE IN THE SOUTH

By Pathfinder

THE good roads movement inaugurated by the New York Herald and Atlanta Journal is acquiring momentum as the scout car sent out by these newspapers rolls up mileage. Several weeks ago the Motor Age gave a brief description of the trip of the New York Herald's White steamer from New York to Atlanta. After a week in the latter city the car started northward, this time over what is known as the capital-to-capital route via Elberton, Columbia, Raleigh, Richmond and Washington, as shown on the accompanying map. Although no official announcement has been made, it is understood that this route was found to be, at the present time, not nearly as good as the route via the Shenandoah valley, Danville, Charlotte and Anderson which the White covered on its trip southward.

As was anticipated by those who have had experience in southern touring, the capital-to-capital route, being comparatively near the coast, leads through many miles of sandy, swampy country, with almost innumerable creeks which are not provided with bridges. But it was not all bad going by any means and the scouts reported a number of localities where the roads were almost faultless.

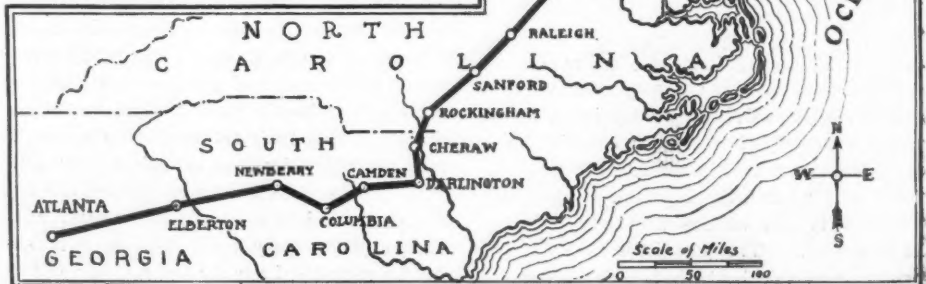
South Stirred to Enthusiasm

Not in many years has the south been so stirred up as it is by this good roads project. The scouting trips of the White have awakened a spirit of emulation so that each county is striving to excell its neighbor in good roads development and an appeal has been made to local pride, the results of which will be far-reaching. The business men in the various cities are alive to the advantages which would result from having the New York-Atlanta highway pass through their sections and, accordingly, each day the scouts learned of road improvements which were projected, and, in many instances, work was ac-

tually started while the White was on its way northward.

Foremost among the good roads advocates of the south is Leonard Tufts, the owner of Pinehurst, the famous North Carolina resort. Mr. Tufts, when he heard of the plans of the good roads scouts, came down from his summer home in New Hampshire, hired 200 men and 100 teams and in 4½ days constructed 3 miles of splendid road over which the White, with Mr. Tufts as a passenger, made an exhibition run at the rate of 50 miles an hour.

Mr. Tufts is now devoting practically his entire attention and is spending no small amount of money in forwarding



MAP OF ROUTE FOLLOWED BY GOOD ROADS CAR

the good roads movement along the capital-to-capital route.

Rivalry Among Counties

At many other points along the line special exertions were put forth to improve the roads in order that the scouts might form a favorable opinion of the capital-to-capital route. Bridges were built over creeks which never before could be crossed except by fording; stumps were cut out of the road, holes were filled in, and, in general, people all along the route gave evidence that they had awakened

from their previous attitude of letting their roads go by default.

The arrival of the scouts in the various town was the big story of the day in the local newspapers. Between Atlanta and Washington the scouts did not have a single hotel bill to pay. In some cases the local chambers of commerce looked after this item and in others the scouts were the guests of the city. Every town, large or small, sent out a delegation to welcome the scouts, these delegations invariably including the mayor and other prominent citizens.

Praise From President Taft

A fitting climax to the series of receptions and entertainments occurred at Washington, where President Taft received the scouts and expressed his appreciation of the work they were doing. Furthermore, the president readily consented to pose for a picture with the scouts outside of the White House.

As pointed out in a previous article, there was a latent good roads sentiment in the south before the New York Herald and Atlanta Journal embarked in their enterprise. But it needed just such a spectacular performance as the trips over the road between New York and Atlanta to quicken and to crystallize the good roads sentiment. People in southern towns have hitherto been thoroughly satisfied with local road conditions if they had good roads extending a few miles from town in each direction. Now they are beginning to see that they cannot be



CROSSING THE SAVANNAH RIVER ON FERRY AT TUCKER'S

satisfied with such a condition and are giving some attention to the condition of the highways from town to town. They can no longer look on a bad spot in the road with equanimity simply because it is 5 miles outside of town and no one ever goes out that far. They are beginning to realize the importance of having a good highway all the way to the next town. Last, but not least, their local pride has been aroused and they are not going to let it be published to the world that the roads in their county are far inferior to the roads in a rival county.

Good Roads' Aid Promised

One of the concrete results of the trip of the good roads scouts has been to inaugurate a strong movement to build a good highway between Richmond and Washington. The leading citizens and commercial bodies of both Washington and Richmond have entered into hearty co-operation and it is a safe prediction that before another



SAMPLE OF ROAD BETWEEN ATLANTA AND ATHENS

no one need have any hesitation in going via the Havre de Grace route.

and were welcomed in behalf of the city by Acting Mayor McGowan. Their work, however, is by no means completed, as there is still another route to be tried out, that by way of the Shenandoah valley, Bristol, Tenn., and Chattanooga, and at this writing the New York Herald's White steamer, with its scout passengers, is on its way to Atlanta by this route.



CONVICTS WORKING ON ROADS AT ABBEYVILLE

year has elapsed the road between the two cities will no longer be the disgrace to the commonwealth of Virginia which it is today. The direct road between those cities is known as the old telegraph road and was described by Pathfinder in the April 22 issue of Motor Age. The scouts heard such discouraging reports of the condition of this road that they essayed a longer route via Gordonsville and Warrenton, but it is doubtful if the condition of this road is enough better to compensate for its 40 miles of extra length as compared with the old telegraph road.

The scouts followed the direct road from Baltimore to Philadelphia, crossing the Susquehanna river on the ferry at Havre de Grace. A vast amount of misinformation exists regarding this road. A number of years ago this road was reported to be almost impassable and this information has been so widely disseminated that most tourists going from Philadelphia to Baltimore take a long indirect route via York and Westminster. As Pathfinder pointed out in the article above alluded to,

The good roads scouts ended their northward trip at New York on June 26

BEACH RECORDS IN ENGLAND

London, June 21—Speed trials on Saltburn sands last Saturday resulted in the smashing of three records, the chief one being a pace of 120.26 miles per hour developed by A. Lee Guinness in the 200-horsepower Darraq which Demogeot drove at Ormond in 1906 in the race in which he made 2 miles inside the minute, notching :58%. Demogeot averaged 123.7 miles per hour, which is proof that the Florida beach is 3 miles an hour faster than the British course. The trials at Saltburn were over a 1-kilometer course. Guinness made four trials, getting 116.5 miles per hour the first time, 117.73 the second, 120.26 the third and 117.73 the fourth.



TEMPORARY TRACK LAID ACROSS SWAMPY GROUND



The Readers' Clearing House



MAY BE CARBON

SYCAMORE, Ill.—Editor Motor Age—I have been having considerable trouble with my car for some time and am unable to stop the trouble. I have a two-cylinder opposed engine under the body. The front cylinder keeps missing when I am running the car slowly or at a moderate rate of speed and going down hill, but when I am going at a good rate of speed and when the power is applied it picks up fine and never misses. There are no explosions through the carburetor or muffler. I have looked after the adjustment of the valve lifters and all the intake and exhaust pipes are tight. I have not as yet looked at the valves, but the compression is good and the car has plenty of power. There is a little pound or knock at every revolution of the flywheel. I have looked after the connecting rod bearings, both shaft and wristpin and the flywheel is tight. I will appreciate any information Motor Age can give me that will lead to the elimination of the trouble.—John Adams.

Motor Age would attribute the cause of your trouble to an excessive deposit of carbon in your front cylinder. This may be due to the fact that owing to the direction of rotation of the crankshaft the front cylinder is getting too much oil. If the cylinders get too much oil, or you use an inferior or a heavy grade of oil, a portion of it will work past the pistons; and the intense heat will consume or evaporate it, leaving a deposit of carbon. This may be augmented by too rich a mixture, which also leaves a film of carbon on the inside and top of the compression chamber and piston head. The films thus formed will in time commence to scale and the projections becoming fused by the heat of the explosions, will serve to prematurely ignite the charge. The symptoms of carbon deposits are generally a back-firing when the current is shut off to stop the motor, and a knocking in the cylinder as if the spark were advanced too far. Another symptom of excessive carbon deposit in the cylinders is the motor showing plenty of power at high car speeds, but being deficient in climbing hills on high gear. At low engine speeds the incandescent carbon projections serve to pre-ignite the charge, thereby reducing the power of the motor. The cure is to take off the cylinder head or entire cylinder if necessary and scrape off the carbon deposit. Carbon deposit also will form on the porcelain portion of the spark plugs, thereby furnishing a circuit over which the high-tension current is more apt to travel than jump the gap between the sparking points of the plug. This causes intermittent firing, the symptoms being similar to those of a poor contact commu-

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems, and invites the discussion of pertinent subjects. Correspondence is solicited from subscribers and others. All communications must be properly signed, and should the writer not wish his name to appear, he may use any nom de plume desired.

tator. This condition is difficult to detect, for the reason that when the plug is subject to the usual test of removing from the cylinder and closing the electrical circuit, the spark is seen to jump free and fat between the points. This is due to the fact that electrical energy sufficient to jump between two points $\frac{1}{2}$ inch apart in the open air, will jump less than $\frac{1}{8}$ inch in the explosion chamber under 60 pounds compression. The only other causes that are plausible are: An obstructed muffler, flat or obstructed water pipe, a loose or worn cam, or ill-timed valves.

SPEED-TRAP WARNING

La Salle, Ill.—Editor Motor Age—It may be of interest to motorists to know that a speed trap of the objectionable Glencoe kind is being maintained in La Grange, Ill., on the Chicago-Aurora road. Inasmuch as there are no crossings on this road, which is on the extreme southern edge of the town, with few or no houses facing it, and practically no driving except by tourists, the locating of police under reasonable conditions would hardly be required. It is, however, highly objectionable to feel that it is necessary to have police hiding in the bushes as they have in this case. Sunday, the Fourth of July, an arrest was made of a car which the police testified had been running for three blocks at the rate of 15 miles per hour by stop watch, and the car was stopped and the occupants fined for running the fourth block at 22 miles per hour. This last block was thought by the driver to be outside the city limits, so it can readily be seen that the town was not thickly settled at this point, and the driver not intentionally or knowingly violating the law. Had the policeman been in sight the desired result of low speed would undoubtedly have been accomplished, but the more probably desired result—a fine—would not have been obtained.—V. A. Matteson.

CYLINDER SHAPE AND POWER

Cleveland, O.—Editor Motor Age—In response to A. J.'s inquiry in Motor Age, issue of June 17, I submit the following: Firstly, I wish to state that the shape of the combustion chamber has no bearing whatsoever on the compression, it simply being a matter of volumetric ratios. The law for the compression of a gas within a

$$\frac{P V}{1.35} = \frac{P_1 V_1}{1.35}$$

Where P = the pressure at the beginning

of the compression stroke and may be taken as 14.7 or atmospheric pressure. V = the volume of gas at the beginning of the compression stroke. This volume is equal to the volume of the displacement of the piston plus that of the combustion chamber.

P_1 the compression pressure (absolute) = compression pressure gauge, plus 14.7.

V_1 equals the volume of the combustion chamber.

In the above equation, solving for

$$\frac{V}{V_1} \text{ we get } P_1 = \frac{P V}{V_1} = 1.35 \text{ or } 89.7 = 14.7 \left(\frac{V}{V_1} \right) 1.35$$

Now the term $\left(\frac{V}{V_1} \right) 1.35$ is simply an ex-

pression for the ratio of volumes and we may denote this term by X. We have then

$$X = \frac{1.35}{14.7} \text{ where } X = \frac{1.35}{14.7} \sqrt{\frac{89.7}{14.7}} = 6.102$$

The logarithm of 6.102 = .785472. Dividing by 1.35, we get .581829, which is the anti-logarithm of the value of X, which is 3.8179.

Now, right here let me make one statement, whenever you have a problem in compression similar to the one you stated in Motor Age, I should advise you by all means to proceed on the basis of unit volume; that is, consider the piston displacement as 1 and the volume of the combustion chamber as a certain per cent of the piston displacement. Then, without regard to the shape of the combustion chamber, proceed in a similar manner as outlined here. Of course this method involves the use of logarithm, and the writer takes it for granted that you are familiar with them.

Since V = the volume of the piston displacement plus that of the combustion chamber, and as before stated we are considering the volume of the piston displacement as 1, the value of V is 1 plus V_1 . Therefore 1 plus V_1

$$\frac{1}{V_1} = 3.8179$$

Solving for V_1 we get

$$V_1 = \frac{1}{3.8179} = .2619$$

The volume of the combustion chamber is therefore approximately 26.19 per cent of the piston displacement on any motor when the compression pressure is 75 pounds per square inch gauge.

Now, in your motor, Mr. M. A. J., the volume of the combustion chamber will be $.3548 \times D^2 \times L \times .7854$. Where D is the diameter of the cylinder, which is 4 inches,

and L is the length of the stroke, which is 6 inches. We have, therefore $.3548 \times 12.566 \times 6 = 26.75$ cubic inches.

Relative to horsepower, I would say that in accordance with the A. L. A. M. standard formula ——— where D equals the

2.5

diameter of the piston and N equals the number of cylinders, your motor, providing it were a single cylinder, would give 16

— = 6.4-horsepower. This, however, is as 2.5

suming that the piston speed is 1,000 feet per minute, which would mean that your motor would have to run at 1,000 revolutions to develop this power. If your engine is to be used for high speed, such as the motor car, this piston speed is all right, but not so for marine work. Since the power of a motor is directly proportionate to the revolutions per minute, your motor, according to the formula above, develops at the rate of .0064-horsepower per revolution, and therefore at 800 revolutions per minute, which is suitable for marine work, the motor would give 5.12-horsepower.

In regard to your method of using a certain number of cubic inches of explosive material at a certain pressure, I would say that the idea is a good one and should in this case advise that after having decided upon the quantity of explosive material to be used, the bore should be considered next, then the stroke worked out from a theoretical indicator card and determined upon by plotting same and using your judgment as to what point on the card you wish the exhaust to take place. In high-speed motors, such as are used in motor car work, you will notice that the stroke is comparatively short and the motor exhausts at about 40 pounds per square inch, while on some long-stroke slow-speed marine engines, also stationary engines, the expansion is carried still farther, in some cases to atmospheric pressure.

In the case of the motor car the stroke is sacrificed for the following reason: Lack of head room under the front hood; the highest possible piston speed with the greatest amount of power. It follows then to a certain extent that the motor car is extremely wasteful in fuel while, on the other hand, the long-stroke, slow-speed motor is more economical from this standpoint.

There are a number of treatises on gas engine designs that illustrate the method of plotting the theoretical indicator diagram and due to lack of space I will not attempt to treat of this subject here; for as it is, I am afraid that Motor Age will think I am imposing upon its good will in allowing me to insert this explanation in its columns. I wish to state that the elliptical-shaped combustion chamber is an excellent idea and possesses one great advantage over that of the irregular-shaped head in the respect that the surface presented to radiation of heat is far

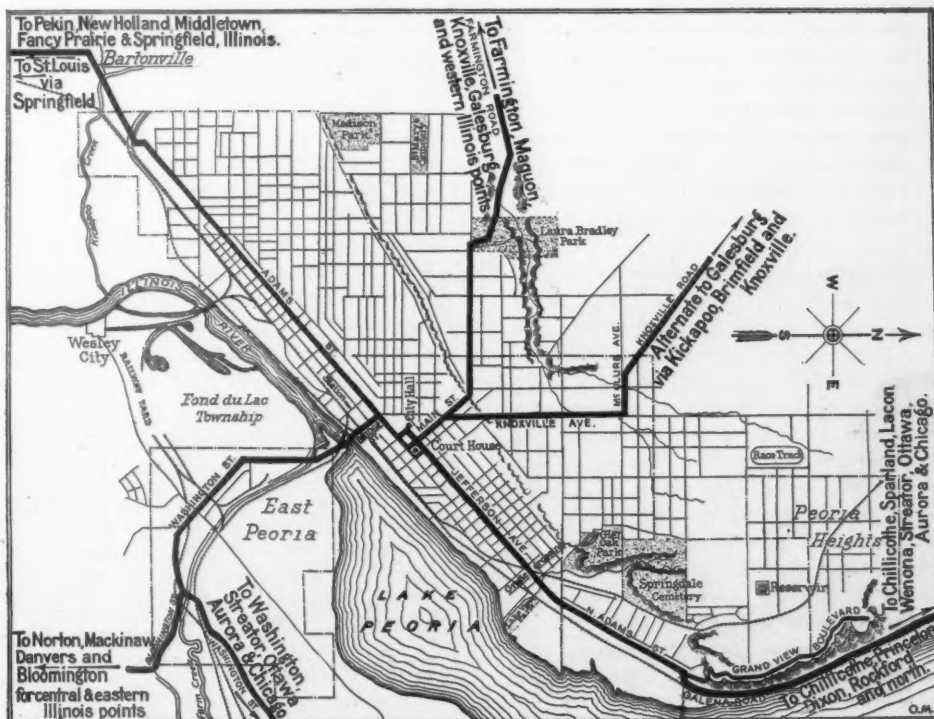
less than that of a right cylindrical section of the same volume. I trust that I have made matters clear, and I wish to thank Motor Age, also Mr. A. J., for their consideration.—A. E. Palmer.

WIRING IS PECULIAR

Dunolly, Victoria, Australia—Editor Motor Age—I have an Orient runabout which I recently received. When the car came to hand I found the wiring peculiar. The Pittsburg coil had three terminals marked secondary, interrupter and battery. The spark plug high-tension wire was attached to the secondary, the wire from the positive pole of battery to the interrupter, the negative wire from the battery going to the switch and thence to the frame portion of the contact breaker. Now, even had the two low-tension wires been attached to the proper terminals of the coil—and they were not according to instructions on the coil—would not the high-tension return current from the spark plug have to cross the platinum points? There is no other way possible to me, the coil having no direct contact with the frame and being encased in wood. If so, would not this passage across the points have been very injurious to them? I altered the wiring; I attached the wire from the positive pole on the battery to battery on coil, and took the wire from the switch to the insulated platinum screw, and attached the wire from the frame portion of the contact breaker to the terminal on coil marked interrupted. Now, I claim that the return high-tension current from the spark plug traverses the frame all its way and leaves the points alone. Am I right in my reasons, or will my mode of wiring do harm to coil or batteries? I get a beautiful spark and no missing at highest speeds. Before I altered the wiring there

was constant missing. In Motor Age, issue May 23, 1907, under the heading "Realm of the Commercial Car," is a statement that in the 4-horsepower Orient runabouts then in use in Chicago there had been "no changes in the disks or fiber tires on the friction wheels since December." I have worked this out on the recorded daily run for these cars and it gives 9,000 miles at least. Can this be possible, or is it an error? Will Motor Age also inform me if the Stevens company is still using the Waltham commercial cars?—Discus.

Your present wiring as described is all right and should do no harm to coil or battery; but in general practice the wiring is as follows: Wire from the positive pole of the battery to the battery terminal of the coil, from the interrupter terminal of the coil to the insulated terminal of the contact maker, from the grounded portion of the contact maker and the ground connection of the coil to the switch, and then from the switch to the negative pole of the battery; or, insert the switch in the positive wire from the battery to the coil, lead a wire from the interrupter terminal of the coil to the insulated terminal of the contact maker, and a ground wire from the engine to the negative pole of the battery, the secondary current, of course, remaining the same in either case, from the secondary terminal of the coil direct to the spark plug. The Stevens company, of Chicago, is still using the Waltham commercial cars, and the statement as to the efficiency of the friction disks, made in the issue of May 23, 1907, is quite correct, although their present daily average is somewhat less than at that time. They are now running over 50 miles a day, and replace the fiber tires on the disks about every 6 months.



COPYRIGHT MAP OF PEORIA, ILL., FROM THE WESTERN EDITION OF AUTOMOBILE BLUE BOOK



Motor Car Development---The Winton

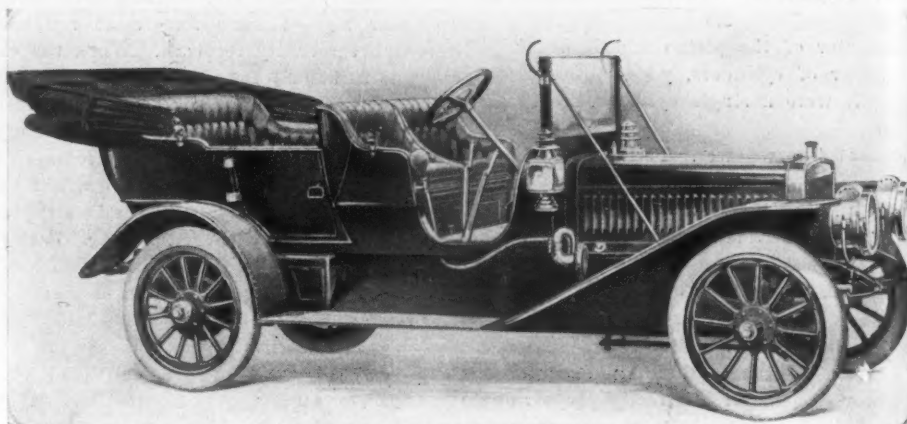


NUMEROUS minor improvements are incorporated in the 1910 six-cylinder 48.6-horsepower Winton car, although the general design of the machine remains as heretofore. From a constructive point of view perhaps no change is of greater importance than increasing the strength of the multiple-disk clutch fully 50 per cent by increasing the diameter of the disks and adding a fourth speed to the selective gearset, so it now affords four forward variations ahead, with direct drive on the third speed and a higher ratio on the indirect fourth. The gear ratios on low and second speeds remain as this year.

Of equal importance is the discontinuance of the scroll type of spring heretofore used on Winton cars and the substitution of a semi-elliptic set in front and another in rear, the front set 42 inches long and with leaves 2 inches wide, and the rear set 51 inches in length and $2\frac{1}{4}$ inches wide. Both sets are regularly fitted with shock absorbers, rubber bumpers and rebound straps. But one spring clip is used on the front springs, it passing through the forged axle; the usual two clips are in use in the rear and all leaves are made without drilling a hole in their centers.

Novel Front Axle

Not to be overlooked—a novel construction in this country, but one which has been used in Europe for a couple of years—is the channel-section pressed steel front axle, with the open channel facing the rear. The Lancia was one of the first cars to use the pressed steel front axle and Americans already are acquainted with the graceful lines possible with this axle construction. The wheelbase has been lengthened from 120 to 124 inches, which has resulted in adding 4 inches to the length of the side members of the frame, which members are inswept at the dash to permit of greater turning of the forward



THE 1909 MODEL SIX-CYLINDER WINTON

wheel, and a consequent smaller turning radius. The longer wheelbase has made a larger body possible, affording more foot room for the front and tonneau seat passengers. The employment of the semi-elliptic springs has resulted in a lower carriage of the body. The body is somewhat wider than heretofore.

An alteration of primary importance is the new Winton carburetor of the single-jet, double-throttle type. The steering wheel is now fitted with a hard rubber rim, the spark and throttle control levers in connection with it have been lengthened and an Eisemann high-tension magneto is used, which dispenses with the use of a step-up coil in conjunction with it, although a single-unit coil is used in conjunction with the secondary ignition scheme in which a storage cell is the current source.

Other Winton Features

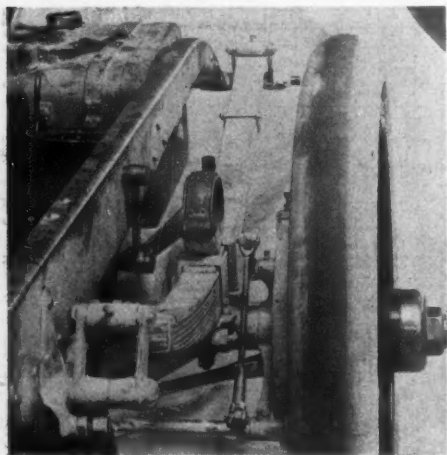
Although these many improvements noted show the outcome of the energies of a year of the engineering department, yet the general skelton, if the term may be used, of the car remains unaltered. A few examples of this will suffice. The car contains a six-cylinder motor with $4\frac{1}{2}$ by 5-inch cylinders, offset in relation to the crankshaft to lessen the side thrust of the piston against the cylinder wall on the explosion stroke; the form of the cylinders remains unaltered, they being cast in pairs with valves on one side and having integral waterjackets; the Winton self-starter which has been used for a couple of seasons is in place; the oiling system is continued without change; the floating rear axle construction remains much the same; and both sets of brakes operate on drums on the rear wheels, there being no brake acting on the driveshaft in rear of the gearbox.

The Winton oiling system may be described as a dual one in that there are two

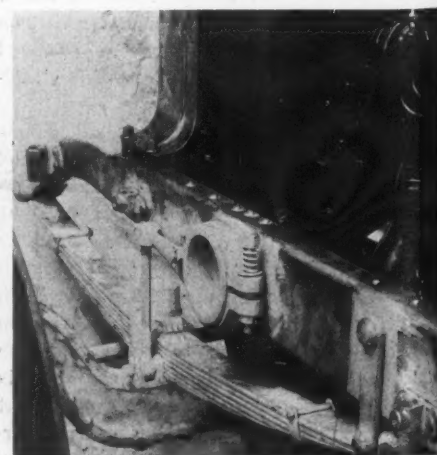
oil pumps, one for delivering the oil to the motor parts and the other to return the oil, which after being used in the motor falls into the splash in the crankcase, to the oil tank where it is filtered and made ready to be once more pumped to the several motor parts. Both pumps are of the plunger variety and are driven by an eccentric from the rear end of the crankshaft. One delivers the oil through ducts to the four crankshaft bearings and the housing for the motor gears and the second, as stated, returns it through strainers to the oil reservoir which is carried on the chassis at the left of the motor. The splash within the crankcase furnishes the cylinder walls; and oil grooves in the cylinders and pistons assist in collecting the splash and distributing it over the cylinder walls and to the piston rings as well as the wrist pins.

New Winton Carburetor

The new Winton carburetor illustrated may be primed from the dash through the bellcrank device shown above the float chamber and the rod which extends from it through the dash. The double throttle is shown, the two throttles working in



REAR END RUNNING GEAR

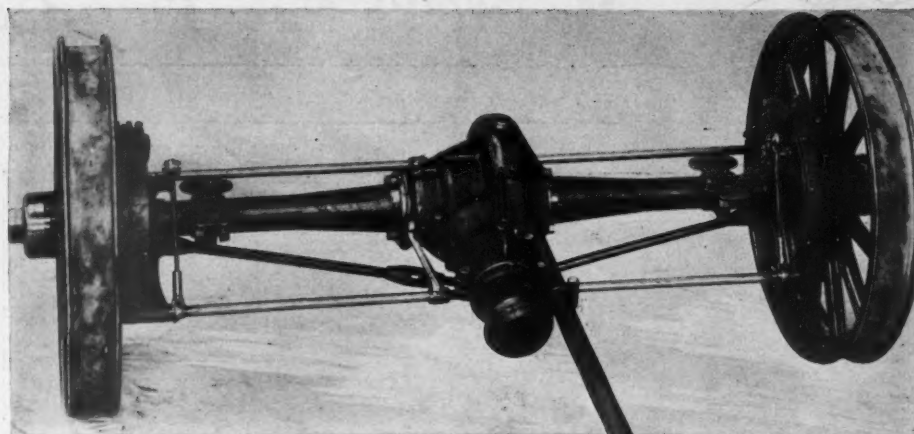


FRONT END SPRING SUSPENSION

combination. No auxiliary air valve of any nature is used and the carbureter is placed on the opposite side of the motor to that on which the valves are located. In connection with the new carbureter is the emergency gasoline supply, incorporated within the regular tank and which provides for a safety of 3 gallons always held in reserve in the regular tank and which cannot be used until a safety valve is turned. The use of a 2-pound air pressure on the gasoline in the 22-gallon tank carried on the rear of the chassis is continued. This pressure forces the gasoline into a safety or running tank on the dash, from which it flows by gravity to the carbureter. The air pressure is maintained by an automatic pump incorporated with the motor.

Location of the Clutch

It has been a characteristic feature of the Winton cars to carry the multiple-disk clutch in a forward compartment of the gearbox where it is still located, the increasing of the disk's diameter by 50 per cent not having interfered with the clutch location. The clutch consists of sixty-seven disks arranged in alternate sets of thirty-four and thirty-three, the thirty-four set attaching to spider connected with the flywheel. These disks are of steel and brought into engagement by four springs regularly spaced at 90° degrees around the clutch circle. Like the selective gearset, the clutch is supported on annular ball bearings. The gearset is a conventional construction with a two-part aluminum case divided in the bearing plane and having the main and countershafts located side by side. The three shifter rods are entirely enclosed, an interlocking mechanism is provided to prevent the meshing of two sets of gears at once and the interlock between the clutch and gearset is such that it is possible to shift from any gear to neutral without releasing the clutch, but impossible to go from neutral into any gear without disengaging the clutch. A coupling is interposed be-



REAR AXLE OF 1910 WINTON CARS

tween the motor and gearbox which consists of a split housing which embraces the squared forward end of the shaft pro-

truding through the forward end of the clutch casing and a similar ending secured to the flywheel. In the propeller shaft between the gearbox and rear axle two universal joints are used, both of the roller type enclosed in grease-tight metallic cases with plugs filling openings for replenishing the lubricant. With the car loaded the driveshaft is claimed to be practically in line with the pinionshaft in the rear axle.

Rear Axle Construction

The rear axle is a floating bearing construction, the short pinionshaft being carried on races of roller bearings. A torsion rod absorbs the rotating tendency of the axle and radius rods from the axle housing to the frame side members transmit the driving motion of the wheels to the car frame. The rear axle housing consists of a two-part differential case and tapering axle sleeves with flanges on the inner ends which bolt to the differential casing. On the rear wheels are the drums for the double brakes, an expanding set and a contracting set, both applied through equalizers. The external set is pedal applied, and its application does not release the clutch, whereas the application of the internal set by side lever does.

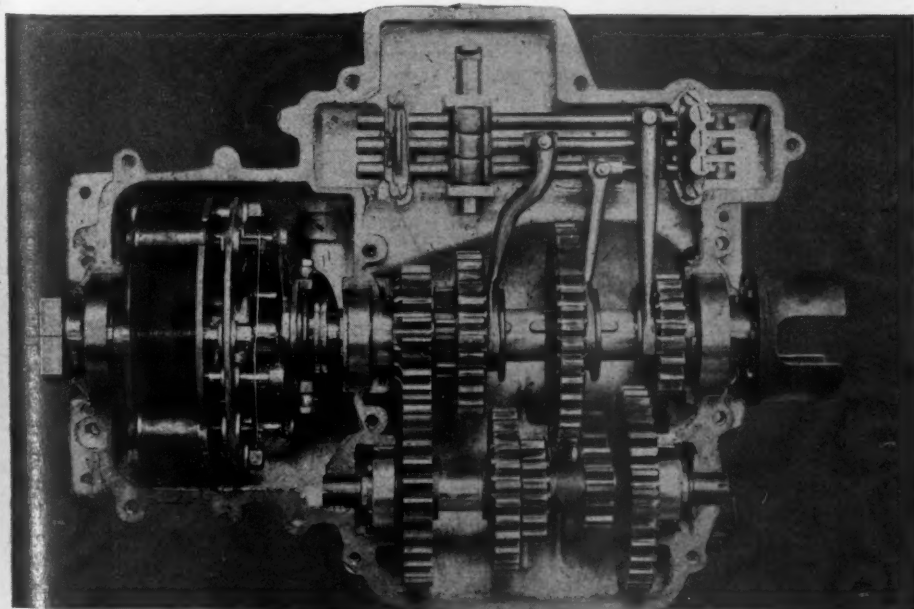
At the purchaser's option long or short pedals for clutch and brakes are fitted and the gearshaft and brake levers will be placed closer to the seat than in the standard equipment. In the body the running boards and guards are made wider and the running board and front floor are covered with pressed aluminum. Some of the other miscellaneous improvements include a new design of radiator with longer tubes and a longer filler cap. The filler cap is of hard rubber.

Self-Starter Is Retained

The Winton Motor Carriage Co. has used for a couple of seasons a self-starter. It is a compressed air type with a piping to the several cylinders and a distributor to deliver the air to the proper cylinders. Attached to cylinders one and six are outlets through which a small portion of the pressure of each power stroke passes to a pressure tank located between the left frame rail and the drivingshaft. Here the pressure is stored to start the motor, when a valve is opened.

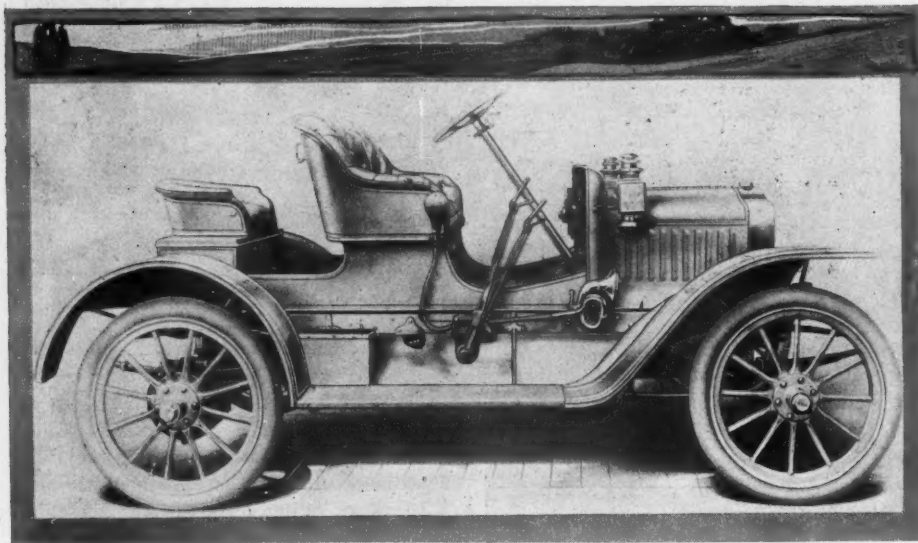


1910 WINTON CARBURETOR



GEAR CASE WITH UPPER HALF REMOVED

Maxwell's New Four-Cylinder Car



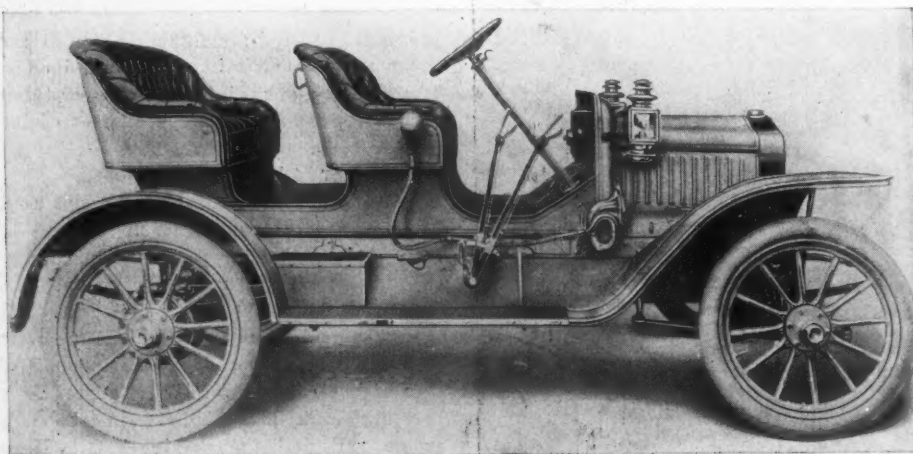
1910 MODEL LIGHT THREE-PASSENGER ROADSTER

ALTHOUGH it has been rumored for several months that the Maxwell-Briscoe Motor Co., of Tarrytown, N. Y., would bring out a four-cylinder car to retail below the \$900 mark with full equipment, and although this model has been on the roads for months and has competed in not a few hill-climbs and other events, it was not until last week that formal announcement of this model for 1910 was made. This new Maxwell, designated model O, differs materially from the majority of cars listed in the \$800-\$900 realm in that it is fitted with a sliding gearset, affording three forward variations and the usual reverse, whereas it has been customary to fit a planetary gearset to cars of this category. The new Maxwell is simply a smaller edition of the company's four-cylinder car with a few alterations in springs and other chassis parts.

Features of the Motor

The motor has an official rating of 22.5, having four cylinders with $3\frac{3}{4}$ -inch bore

and 4-inch stroke, the rating being at 900 revolutions per minute. Being a Maxwell design it is natural to expect the use of a three-point suspension and unit-construction of the motor and gearset, two leading characteristics of this concern. This power plant is illustrated, showing the four-cylinder motor composed of twin cylinder castings with opposite, interchangeable valves, intakes on the right and exhausts on the left. The front-end flywheel is continued, the fan spokes of the wheel sufficing instead of a separate fan. Placing the flywheel in front has resulted in locating the timing gears at the rear end of the crankcase. As in the other four-cylinder Maxwell cars, the unit power plant affords a separate compartment for the multiple-disk clutch located between the crankcase and gearbox. On each side of the crankcase is a large rectangular plate which when removed offers access to the lower connecting rod and crankshaft bearings.



MAXWELL 1910 LIGHT FOUR-PASSENGER ROADSTER

The interior parts of the motor have been carefully worked out and selected material used. The crankshaft is finished by grinding all over and revolves on three plain bearings; connecting rods are steel forgings with compressed babbitt bushings; camshafts are carried on three bearings each and are hardened and ground; and the valve tappets hardened and ground reciprocate in bronze sleeves for guides.

Thermo-Syphon Cooling

Cooling is by thermo-syphon, water entering the cylinder jackets at the hottest point on the left side beneath the exhaust valves and escaping from the jacket heads through a Y pipe to the radiator. The radiator carries a distinguishing broad brass band across its face midway its height.

In lubricating the motor oil is taken from a reservoir carried on the front side of the dash and under the hood. The oil in its course to the four cylinders and the clutch compartment flows through a single



ONE OF THE UNIVERSAL JOINTS

sight feed on the dash. By a slot in the dash and a glass gauge on the oiler reservoir it is possible to know the quantity of lubricant in the oiler without raising the hood. Special oiling arrangements are made for the pistons and cylinder walls in that each cylinder has an oil groove which is constantly kept filled from the mechanical oiler and into this groove the lower edge of the piston dips at the bottom of the stroke, thereby picking up sufficient oil which it distributes over the cylinder wall on the upstroke.

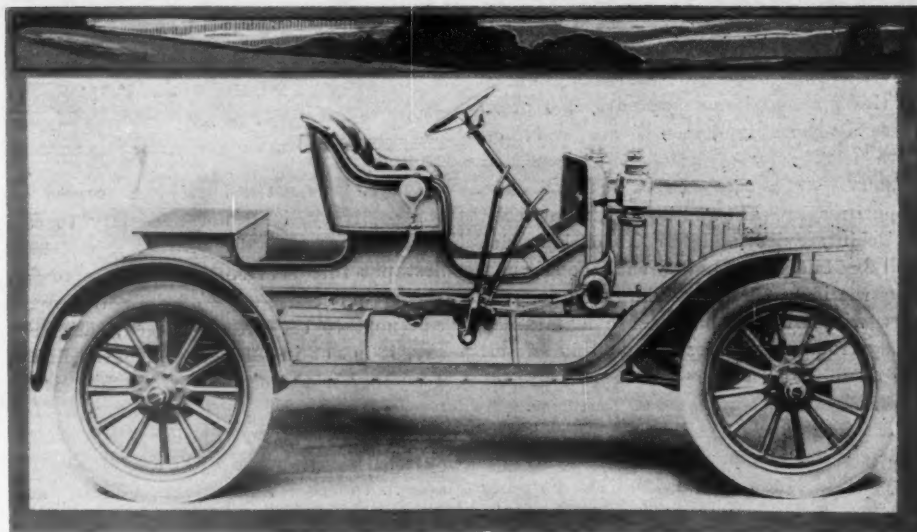
The ignition fitted is a dual system comprising a standard magneto equipment, with the magneto placed above the clutch compartment. A set of dry cells is fitted for exigencies. The plugs are located above the intake valves and a fiber tubing over the cylinder heads contains the high-tension wires from the unit coil box on

the dash to these plugs. The Maxwell carbureter is fitted.

In the transmission system the multiple-disk clutch comes first and consists of fifteen disks of saw steel arranged in alternate sets of seven and eight. The clutch illustration shows how one disk of each set attaches at its hub through six radial slots which slip over corresponding keys on the shaft and how the other disks attach at their periphery. The Maxwell company was a pioneer in disk clutch construction, having used this type on an experimental car in 1903 and having used no other type of clutch on its cars. Each disk is concave 1-32 inch on one side, which has been done to make engagement gradual without slipping. The clutch operates in oil.

Roller Bearings in Gearset

In the sliding gearset roller bearings are used for carrying the main and countershafts, the third speed drives direct, gears are drop-forged and cut and hardened and the Maxwell interlocker is used which prevents changing gears with the clutch engaged. The propellershaft carries two universal joints in each of which the cross is hollowed out to carry lubricating oil. The rear axle construction is typically Maxwell with the pinion shaft supported on a pair of roller bearings and a thrust



NEW MAXWELL IN ITS RUNABOUT FORM

special mud apron is fitted which extends from the radiator back to the rear of the transmission. Mud is prevented from splashing on the body because of a mud apron fitted between the frame and the running board and fenders. The model Q can readily be distinguished as a Maxwell machine by the radiator, bonnet, dash and general body lines. The wheelbase measures 93 inches, the tread is standard and tires are 30 by 3½ inches all around.

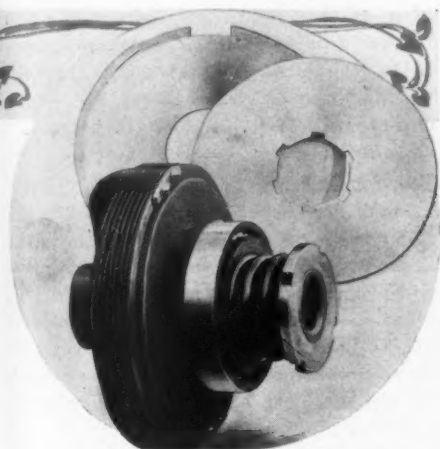
STUDENTS ASSEMBLE CARS

Tangible results of the instruction in the repairmen's course maintained in the recently established school at the factory of the H. H. Franklin Mfg. Co. in Syracuse are in evidence in the shape of two cars assembled from raw stock by several of the pupils. These cars were of the two largest types made by the company, one a 42 and the other a 28-horsepower model. It took three members of the class 2 weeks to construct the two cars, and when the work was finished it was passed upon by the testers just as are cars in the regular course of manufacture and was pronounced up to standard. The class has altogether twenty-six members, under the supervision of I. O. Hoffman, formerly an instructor in Syracuse university. The

course is one of 26 weeks, providing both theory and practice, most of the time being spent in practical work. In the school other courses are maintained for other classes of employees.

WILL BUILD THE BADGER

The Badger Automobile Co., of Columbus, Wis., has been incorporated with a capital stock of \$100,000 to manufacture motor vehicles. A factory will be erected at once and runabouts and touring cars will be the product for the present, the manufacture of trucks and other types of vehicles to be taken up later. The filing of the articles of incorporation late last week was the first intimation of the project to Wisconsin people, as the preliminary work has been carried on quietly. An experimental machine has been operated at Columbus for about 2 months. It is claimed that \$50,000 of the capital has been subscribed for, enough to start the company on its way, and the remainder will be subscribed for as needed. The promoters of the company are all leading business men of Columbus and include William C. Leitsch, capitalist; E. W. Arbogast, George C. Holtz, A. M. Bellack and E. M. Poser. The car will bear the name of the Badger.



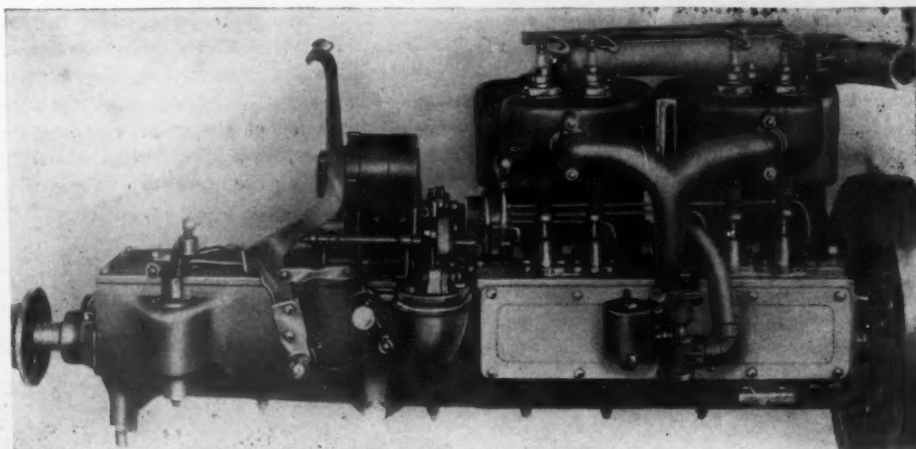
MAXWELL DISK CLUTCH

dummy pinion back of the periphery of the large differential bevel to keep it in perfect mesh with the pinion. This axle carries 9 by 1½-inch brake drums on which operate cast iron internal shoes constituting one set of brakes and asbestos-lined clamping bands for the other set.

The chassis construction is conventional. The frame is a pressed steel one, hot-riveted throughout; elliptic springs are fitted in front and rear, the front pair 32 inches long, the rear pair 36 inches and the leaves in both 1¾ inch wide. The rear axle drives the car through strut rods extending from the ends of the axle housings to the side members of the frame.

Three Styles of Bodies

The chassis is fitted with three styles of bodies, a conventional two-passenger runabout, a three-passenger roadster and a four-passenger roadster. On all models a



INTAKE SIDE OF MAXWELL UNIT POWER PLANT

ELECTRICAL DEVICES USED IN MOTOR CARS

By Thomas J. Fay

Part XV

IN the maintenance of batteries, impurities play an important part, and often these undesirable elements are delivered with the batteries when new from the makers. As a rule due to lack of care, impurities are allowed to enter the cells while in service, and the life of batteries will be but short under such conditions. Satisfaction will depend largely upon the care with which the cells are maintained free from impurities, and this detail should be given the fullest measure of care, on the part of users of batteries.

The action that follows the presence of the respective impurities in a cell of battery, if it tends to continue the forming process, will result in an increased capacity of the battery, but the life of the same will be shortened in consequence. When a cell of battery is in process of construction, the active material is applied or it is formed out of the grids, and in the latter case the grids are made of pure lead. In ignition batteries, which is all that is being discussed at the present time, the plates are of the Faure type, in which the active material is applied to the grids, and after it is pressed into place it is subject to a forming process.

Forming Process Necessary

The forming process is necessary, for the reason that the active material is not in final form when it is applied as a paste, paint or cement, and to reduce it to final form it is subjected to the forming process. The final form was given as peroxide of lead on the positive plates and sponge lead on the negatives; the raw material, in the form of paste, paint or cement, may be various combinations of salts of lead, made into suitable shape, by mixing with suitable liquids as sulphuric, nitric, hydrochloric, acetic or other acids, in divers proportions and strengths.

In the forming process the cells of battery are charged, just as they would be to prepare them for a subsequent discharge, excepting that dummies are employed, for convenience, and in the process all the active material is reduced to peroxide of lead on positive and sponge lead on negative plates. If the forming process is continued to excess, the grids will be attacked and the lead of the same will be formed into peroxide of lead for the positives and sponge lead for the negatives. Grids, so reduced, will lose strength and will fall apart, just as active material lacks stability when it is detached from the grids. The several forming solutions have different strengths, from the point of view of ability to reduce salts of lead from one state to another, and sulphuric acid solution, if it is not too strong, is low in forming ability, relative to nitric acid, for illustration; in the process it is the aim to hasten the forming process to reduce cost and in service it is the aim to defeat the further forming process because it will do

damage. Since the battery is formed before delivery, it is not necessary to continue the process. True, when a battery is first put into service, it is not up to full capacity, because some of the active material next to the grids is green, that is to say, it is not in final form and the life of a battery is thereby prolonged if it is delivered below capacity. The first few cycles of charge and discharge are usually enough to bring the cells up to capacity, due to the fact that in the sulphuric acid electrolyte the forming process will continue in a relative mild rate, and the damage that may be done will be but slight if the batteryman is the possessor of a little skill.

Danger in Lack of Attention

If, through some lack of attention in the manufacturing process, some of the forming solution is left in the cells of battery as they come from the maker the forming process will continue as long as this condition is allowed to hold and the life of the battery will be very much shortened in consequence. This is a fair illustration of what will happen if batteries are allowed to become contaminated in practice, which condition will be brought about when a careless chauffeur pokes a screw-driver down into the electrolyte. Iron, while it is not a material that will take on the characteristics of a vigorous forming solution, when it is dissolved in sulphuric acid will do much damage in that the plates will rot and fall apart if very little iron is allowed to dissolve in the solution, and if the cells of battery are then allowed to go through successive cycles of charge and discharge, which is the only thing that can happen in practice if iron is allowed to enter the cells.

In a general way there are three classes of trouble to be encountered, due to the presence of foreign matter in cells, as follows: a, continuation of the forming process to a point where the grids will be reduced to active material and the plates will lack in mechanical strength in consequence; b, plating over the negative plates, thus reducing surface, hence capacity, and c, disintegration of the grids, due to electrolytic action, and to chemical activity, thus diminishing the strength of the grids.

Impurities Likely to Give Trouble

Not counting such extraordinary conditions as are possible, when batteries are very poorly made, the foreign substances

that are prone to find a way into batteries may be set down as follows: Copper, mercury, iron, nitrates, chlorides, tin, zinc, bismuth, antimony, platinum, arsenic and acetic acid. The extent to which any or all of the impurities named may abound in a battery is difficult to fix; it is even unnecessary to discuss this phase of the problem on the ground that the amount of damage that will follow even a trace in most cases is more than should be tolerated.

In the maintenance of batteries, it is desirable to examine the contents of the electrolyte, particularly in view of the ability of the same to hold in solution such impurities due to the solvent power of sulphuric acid in dilute strength. A number of the most available tests for impurities, are as follows:

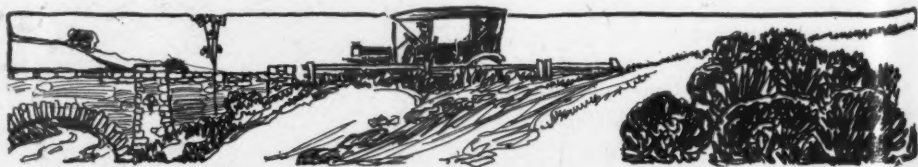
Neutralize a quantity of the electrolyte to be investigated, after diluting the same, by the addition of an equal amount of pure distilled water, using strong ammonia water for the purpose. To the solution, so neutralized, add one-thirtieth of the amount of the same of hydrogen peroxide, thus reducing any iron present to the ferrous state. If a sample of this solution is rendered alkaline by the addition of a sufficient quantity of ammonia water, then, if iron is present, enough to amount to anything of great moment, from the battery point of view, a brownish red precipitate will form. A test for chlorine is as follows:

Test for Chlorine

Make a solution of nitrate of silver in the proportion of 20 grams of the same, in 1,000 cubic centimeters of pure distilled water, and add a few drops of this solution to a small quantity of the electrolyte to be investigated; if chlorine is present the solution will turn white, owing to the formation of chloride of silver, which will precipitate out.

A test for nitrates is as follows: In a test tube, holding 25 cubic centimeters of electrolyte to be tested, add 10 grams of ferrous sulphate; to this carefully add 10 cubic centimeters of chemically-pure sulphuric acid by pouring the same slowly down the side of the tube; in the presence of nitric acid, a brown solution will form between the electrolyte to be tested, and the concentrated solution of sulphuric acid.

The presence of copper may be detected from the fact that when ammonia solution is added to electrolyte, a bluish-white precipitate will form. In testing for mercury lime water, if it is added to electrolyte in which mercury is present will evolve a black precipitate. Testing for acetic acid



is as follows: To a small quantity of the electrolyte to be tested, add enough ammonia water to render the same neutral; ferric chloride added to this solution will cause the same to turn red in the presence of acetic acid and the solution will then bleach, provided hydrochloric acid is added, thus affording conclusive proof of the presence of the undesired acetic acid.

Strength of Electrolyte Important

Primarily, if the electrolyte is not properly made, using pure brimstone sulphur for the purpose, it is highly improbable that the results will be good; sulphuric acid made from iron pyrites may show traces of iron, and all the ills of this impurity will be visited upon the battery. In practice, the idea of going to a drug store and purchasing chemically pure sulphuric acid and diluting the same for use in the battery is one of the most direct ways to fall into error; the magnitude of which is to be measured in shortened life of a battery so treated.

Electrolyte, to be assuredly good and free from impurities, such as will do damage to a battery, should be purchased from makers of the same, who know the requirements and the nature of the damage that is bound to follow the use of impure material in a battery. The specific gravity of the solution should be closely regulated in view of the service to be rendered, taking into account the fact that in small cells the solution must be a little stronger than standard practice dictates which standard practice takes into account types of central station batteries in which the jars are large, and the amount of sulphur present will be enough for the purpose, even though the strength of the electrolyte may be relatively low.

Measuring the strength of the electrolyte at 60 degrees Fahrenheit, it should never be stronger than 1.26 specific gravity and with large jars, the strength of the electrolyte will fall to about 1.20, but in vehicle work, and sometimes ignition batteries, owing to the close nesting of the plates and to the smallness of the jars, the electrolyte may fall to a lower point, say 1.150, which is about the lowest allowable limit for a battery in its fully discharged state. Ignition batteries, for the reasons as above given, will have the electrolyte at 1.25 when the cells are fully charged, and as above stated, on discharge, the low limit named will be in evidence; the important matter is to maintain the same within these limits in every individual cell alike, and the test for strength should be made when cells are in a fully-charged state at the temperature named, that is, 60 degrees Fahrenheit, or a compensating factor should be used if the temperature is higher or lower.

Adding Water to Cells

In service water will have to be added to the cells to compensate for evaporation and for the loss that takes place during charge, brought about by the entraining of water with the bubbles of gas that shoot



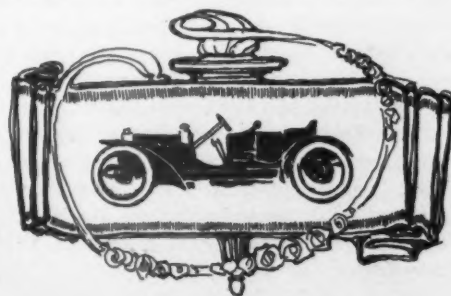
off and out of the jars, if they are open, that is to say, if the covers are removed before and left off during charging, which is not usually the case. The result in any event is in favor of increasing strength of the electrolyte, and water will have to be added from time to time in order that the plates may not be exposed to the atmosphere above the line of active material; which is a point that must be cared for if the battery is to last for a long time. The water so added should be pure—distilled—and the right quantity to add, will be determined by means of a hydrometer placed in each cell between the separators if there is sufficient room or the electrolyte may be withdrawn, through the utility of a gun made of hard rubber with a long slender neck. The test should be made when the battery is charged and every cell should be examined rather than to test one cell and conclude that all are in an average condition.

Should Seal Covers

Covers should be carefully sealed in order that the electrolyte will not slop out and to protect the cells from dust and other accumulations, such as may hold impurities, the character of which may be highly detrimental to the cells. Connections, while they are always more or less a source of annoyance, should be kept tight, in good electrical contact and from corroding, which is possible if they are coated over with vaseline.

Batteries, as they are required to serve in ignition work, due to the presence of sulphate, which is persistent under the conditions of its formation in this service, will induce a condition of starvation if the batteryman, who has the matter of charging in hand, is not perfectly accustomed to this class of work, even though he may be quite expert at battery-charging in general. A battery is not necessarily charged when the amount of electrical energy it is said to hold is expended on it, and even when the inefficiency is compensated for by prolonging the charging period for a sufficient time to make up for the same.

A battery is said to be charged when it boils violently, which boiling is due to the hydrogen evolved at the negative pole and oxygen given off at the positive pole.



While this condition of boiling is a sign of approaching charge, it is not conclusive evidence, and as a matter of fact boiling may be reduced by reducing the rate of charge, and in practice it is the idea to so taper off the charging rate as to prevent violent boiling during the process. When a battery is first put on charge the maximum—makers'—rate of charging should obtain, and the process should be governed as respects the rate from that time on by temperature, which should be held below 100 degrees Fahrenheit as a maximum, and at 90 degrees Fahrenheit in so far as it is possible to do so. When boiling starts, the rate of charge should be reduced to a point where the boiling phenomenon will be barely in evidence, and as the plates tone up—approaching their natural color—the specific gravity of the electrolyte should also approach the maximum.

Color of Plates When Charged

Positive plates in the charged state are of a velvety brown or chocolate color; negative plates have the color of sponge lead, which is very nearly light gray. When a battery is approaching a condition of full charge the color tones up quite noticeably, and it is possible to mistake a condition of full charge, if color alone is taken as the evidence; the exterior will have the appearance of full charge, since the active material, on the exterior surface, will reach its charged form first; if the thickness of active material on the grids is very thick, as it is likely to be in low discharge rate work, charging by color, as evidence of a state of full charge, will be to limited advantage.

In ignition work, if cells are prevented from forming short-circuits, the question of excessive rates of discharge will not have to be considered on the count that the demand in this work is far below the capacity of the batteries used; it is only on charge, under the circumstances, that care must be exercised to guard against an excess, and to see that batteries are fully charged. The potential difference between terminals while the charging current is flowing may be noted, and when a cell is fully charged, if the plates are balanced in point of capacity, as shown by a cadmium test, the potential difference should not be less than 2.5 volts per cell, when the rate of charge is just enough to induce a condition of gentle boiling. As a corrective measure the potential difference should be run up to 2.6 volts, but it is not desirable to increase the same beyond this point.

The method of charging little and often is also to be recommended where primary batteries are employed.

(To be continued.)



Legal Lights and Side Lights



MILWAUKEE PLANS CHANGES

THE common council of Milwaukee, Wis., is working on an ordinance designed to supplement the state laws regulating motor vehicles and their operation in that it will fit local conditions. Members of the Milwaukee Automobile Club are on the alert and will carefully watch developments, as there are a number of councilmen who have for some unknown reason no love for the power vehicles. It is expected that the officers of the club will be called into conference with the council committee when the ordinance is drafted. The ordinance as at present constituted is the same that has been lying idle in the committee box for more than a year and was introduced by Cornelius Corcoran, president of council. Since that time, however, a number of important amendments have been framed, which include: That cars come to a full stop when running behind a street car that stops at a corner to permit passengers to alight or enter, until the car starts and all passengers are on the sidewalk or platform; to establish columns bearing red lights at street intersections to divide the traffic; to establish a speed limit of 8 miles an hour within a territory comprising about thirty blocks in the downtown business district; to eliminate all unnecessary noises. The original Corcoran ordinance contains a clause requiring all operators to be examined and licensed, but this provision will, it is expected, be removed as unnecessary and a hardship.

RECOMMEND CHAINS

Attached to the accident policies now issued to motorists by two insurance companies is a circular recommending the use of tire chains. The insured are asked to use every precaution toward avoiding accident, one of which is the fitting of non-skids when the roads get wet and slippery. The circular is a warning notice to policy holders, and reads as follows:

"This corporation does not presume to dictate to policy holders the precautions which they shall observe for the prevention of accidents. It does, however, expect that he will do his duty to the public at large by using the utmost care and among other things we urge upon all policy holders the advisability of using such safety devices as the ordinarily cautious man would employ, such as adequate brakes, signals and anti-skid chains. Our policy of insurance indemnifies the holder against legal liability, but no policy can indemnify the holder against criminal prosecution, to which in the present state of public opinion, owners of motor cars are perhaps more exposed than the owners of any other form of property. If the clamor of public opinion did not have its effect upon the

decisions of our courts and exact justice always was done, many owners of self-propelled vehicles would be squashed at the opening of the trial. It, therefore, behooves the owner who would place himself beyond the possibility of these unpleasant experiences to use the utmost degree of care and to employ safety devices whose merits have been proven, in which class we refer particularly to the anti-skid chains which are marketed, and which are intended for use when roads are covered with ice or snow or when they are otherwise in a slippery or dangerous condition."

CHAMPION FOR MOTORISTS

Seebert G. Jones, circuit attorney of St. Louis, Mo., has declared that persecution of motorists must cease, so far as prosecutions in the criminal courts are concerned. Mr. Jones issued his mandate in open court when Jephtha D. Howe, chairman of the city republican committee, was arraigned on a charge of exceeding the speed limit in a motor car presented to him at the close of the spring election. Ticket for which Mr. Howe was manager. Mr. Jones declared that it has become a known fact that the St. Louis police arrest motorists and hale them into the courts when they have no provocation whatever, and he expressed the opinion that the cause was the desire in most cases of the individual members of the metropolitan force to gain notoriety. "Every man brought into this court," said the circuit attorney, "will be discharged without trial unless there proves to be merit in the case. The circuit attorney's office will nolle prosequere such cases as fast as they are called for trial."

HUB WANTS TEST CASE

Corporation Counsel Babson, of Boston, has been going over the new motor law very closely since it went into effect to see if there were any loopholes that would not negative the street traffic regulations in Boston. He has come to the conclusion that the regulations are not abolished by the new law, although he is not backed up by many attorneys who have gone over the matter. The traffic regulations were put in force by the street commissioners under a special law, and the new law gives the power to city councils and boards of aldermen or selectmen. However, to make certain whether the new law supersedes the other he is waiting to have a test case made when some motorist violates the traffic regulations. So far no one has violated the regulations, and therefore the matter stands unsettled in the minds of some. Police Commissioner O'Meara, however, seems to think the old rules are abolished and he has instructed his patrolmen to that effect.

NO REBATE ON TAGS

In a decision rendered by Attorney General Denman, of Ohio, upon the request of State Registrar of Automobiles Fred H. Caley, it is held that the state law gives no rebate to motor car owners for the time after the end of the year. According to the law every license expires on the last day of December and a new one is required after the first of the year. For instance, a person securing a license in October can only use it until the end of December. Mr. Caley said: "Some regard this as an injustice, but it is the only way in which the department can be conducted on a business basis. It is impossible for police officers to see if a machine is licensed up to date when there is a constant stream of licenses expiring."

NEW LAW IN TOPEKA

Under the provisions of the new law which went into effect in Topeka July 1 no person is expected to drive a motor car on the streets of the city without a permit from the motor car board. Another feature of the law is that the annual registration of machines is done away with and from July 1 only one registration is necessary. Other features of the new law are: Each applicant must sign an application and pay a fee of \$1. When thought necessary by the board the applicant must give a practical demonstration of his or her ability to safely drive a machine. Special meetings will be held by the board on the first Monday of each month for the purpose of holding examinations.

It is not unlikely that the new ordinance in Topeka, Kas., limiting the age of motor car drivers and making speed regulations, which went into effect July 1, will be knocked out on a technicality. One section of the ordinance reads "any person who fails or neglects to heed the 'command' to take out a license," etc., while it is pointed out that there is nothing in the ordinance which "commands" anyone to take an examination and provide himself with a license.

GARAGE LAW IN COLUMBUS

Upon the request of the city council Fire Chief Lauer, of Columbus, O., has prepared an ordinance regulating garages in the Buckeye capital. The ordinance is considered entirely too stringent by garage managers. It provides that all garages shall be but one-story in height and shall be constructed of fireproof material. Signs prohibiting smoking around the garages shall be displayed and the ordinance also regulates the storage and use of gasoline and the stringing of electric wires. The ordinance will be introduced in the city council at the next meeting and it probably will pass.



News from the Motor Clubs



Columbus Wants Another Meet—Since the recent races at Columbus, O., held under the auspices of the Columbus Automobile Club were so successful it has been decided to hold another meeting in September. One of the events on the program will be a 24-hour endurance race which are now quite popular.

Columbus Club Has Organ—The Columbus Automobile Club, of Columbus, O., has issued the first number of the Columbus Automobile Club Bulletin. The booklet is an attractive affair with plenty of advertisements and all the live news of the club. It contains among other things a road map of a 2-days tour of central Ohio and the announcement is made that a similar map will be contained in every issue.

Detroit Club Works On Roads—The Automobile Club of Detroit has purchased a road scraper of the latest model and has a force of men at work on the road between the Pine Lake clubhouse and the extension of Woodward avenue. The club has been supporting a force of men since spring, engaged in regravelling portions of the highway nearer the city and will not rest until the 21 miles between Detroit and the clubhouse can be pointed to as the best highway of its length in Michigan.

Meet Postponed Until Fall—The Milwaukee Automobile Club has been advised that it will not be able to have the use of the state fair park mile circular track for its annual meeting until after September 17, the closing day of the Wisconsin state fair, and all plans for contests before that time have been dropped. The meeting, which may include the third annual 24-hour contest, will be one of the biggest in the northwest, as the racing board plans to invite the leading drivers of the country to go there and will hang up big purses for the competitors.

Interesting Information—The law and ordinance committee of the Quaker City Motor Club—G. Douglas Bartlett and C. Edgar Shreve—has just issued a neat little pamphlet containing the essential points of the present laws of Pennsylvania and New Jersey regulating the use of motor vehicles. The interest awakened in the communities along the route of the club's recent Pittsburg endurance run was manifested by the raising by Lewistown enthusiasts of a \$200 fund and the employment of a whole coachload of men and boys to pick all the loose stones from the old state road which passes through the Lewistown Narrows. Columbia county, which was side-stepped by the Quaker pathfinders owing to the poor going furnished by its roads, is awakening to the situation, District Attorney Small having

advised all road supervisors in the county that unless they get busy immediately and remove the loose stones from the roads and improve them generally he will proceed against them according to law.

Boston Talks a 24—It begins to look now as if a 24-hour race would be a certainty in the fall for Boston. The officers of the Boston Motor Club have been talking the matter over for some time and they have had a conference with Andy Welch, owner of the Readville track, about securing the place. He is willing to have a 24-hour race when the season for horse racing is ended. The date now in mind by those anxious to run the event is September 10 and 11. It is figured out that with Lowell having two big events Monday and Wednesday of that week that the most of the cars in those races would enter the 24-hour event Saturday.

Rochester Plans a Tour—The touring committee of the Automobile Club of Rochester has made definite arrangements for the first annual tour to be held by the club. The tour will start from the headquarters of the club at the Hotel Seneca, Thursday, July 22. The route passes through some fine sections of the state and nearly all the inland lakes are touched in the trip. The first day's trip will be to Canandaigua and Geneva, where a stop will be made for lunch, then on to Auburn, stopping there over night. The second day will be by way of Moravia to Ithaca for lunch, and spending the night at Sheldrake, a beautiful spot on the shore of Cayuga lake. The route on the third day will leave Cayuga lake and pass over to the east side of Seneca lake, through Ovid back to Geneva, stopping there for lunch and then up the west side of the lake through Dresden, Starkey and Rock Stream and Watkin's Glen to Elmira, where the night will be spent, returning to Watkin's Glen in the morning to spend Sunday at this well known resort. Leaving Watkin's Glen on Monday morning, the tourists will start for Bath, skirting around Lake Lamoka, stop for lunch at Bath and after visiting the soldier's home, the tour will proceed down Pleasant valley to Hammondsport, at the head of Keuka lake and then down the west side of the lake through the numerous summer resorts, camps and vineyards to Penn Yann, where the night stop will be made. On Tuesday morning the start will be made for home by the way of Naples, Wayland, Dansville, Conesus, Geneseo, Avon, Scottsville to Rochester, stopping for lunch at Dansville. The tourists will be followed by a repair car with two mechanics who will look after any troubles which might happen en route. Each car will carry an official number

showing it is a participant in the tour and it is expected that each car will also carry a Rochester pennant. Cars will be checked in and out the same as on the A. A. A. tour and the car making the best performance in checking in will be given the 1909 touring trophy.

Preparing For Fall Banquet—The Quaker City Motor Club's banquet committee is already at work on the details of next fall's symposium. As not a few of the members believe that the presence of the women will lend eclat to the occasion, Chairman Frank Hardart is polling the entire membership with the idea of getting authoritative tabs on the views of the majority in this respect.

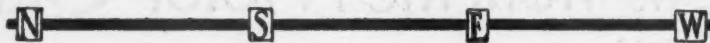
Owners Enjoy a Run—The Outing Automobile Club, composed of business and professional men driving motor cars, had a pleasant run from Indianapolis to French Lick and return on July 3 and 4. Probably a dozen cars made the run, the route that was taken during the endurance test of the Indianapolis Automobile Trade Association last fall being followed. There were no accidents or attempts at speed records. The club makes a run each week.

Club Wants to Help—The Kenton Automobile Club of Kenton, O., which has a membership of fifty of the prominent business men of that city, has made an unique proposition to the county commissioners of Hardin county. The club asks permission to select a stretch of road in the county which will be improved under the direction and at the cost of the club. It is proposed to improve at least 4 miles of pike in that manner. The club also asks the commissioners to erect guide posts at all road crossings in the county. The club has sent to Columbus and Toledo for copies of the traffic ordinance.

Adirondack-Champlain Tour—The Automobile Club of America has issued a pamphlet giving specific route directions for a tour into the Adirondacks and Lake Champlain. This has been prepared in time for the use of motorists desiring to visit the mountain district for the purpose of seeing the ter-centenary celebration on Lake Champlain. No organized run will be made; but any motorist may procure a copy of this touring pamphlet free by application at the bureau of tours of the Automobile Club of America building, West Fifty-fourth street, New York city. The tour takes in beautiful and picturesque roads from Albany to Saratoga, past Lake George, Schroom lake, the mountains of Elizabethtown to Plattsburg, and returning include the Green mountains to Rutland, Manchester, Bennington and Troy.



From the Four Winds



No. 2 Ford Homeward Bound—Ford car No. 2, winner of the Guggenheim cup in the ocean-to-ocean race, left the A.-Y.-P. exposition grounds at noon July 7 for the return trip to New York city, returning by way of the southern route. The car is driven by the winners, Scott and Smith.

Farmers Using Engines—Gasoline engines will play an important part in harvesting the small grain crop of Kansas this summer. They were used on binders to some extent last year and the result was so gratifying that their number will be increased to a large extent. It was found last summer that a farmer could work his binder in the field with the aid of a gasoline engine when otherwise it was too heavy for the horses to pull. Not a few farmers succeeded in cutting as much as 200 acres of wheat last year with the engines and expect to do better this year. Very little engine power is needed to run the cutting device on a binder, and an ordinary farm team is able to pull the machine thus fitted in a wet field.

Big Gun On Packard Truck—The largest automatic gun in the world was tested recently at Cleveland, being the first government test of a heavy rapid-fire gun mounted on a motor car. A Packard 3-ton truck was used for the demonstration. Lieutenant-Colonel O. W. Lissack, of the ordnance department of the United States army, and Dr. S. W. McClean, designer of the gun, had charge of the tests, being assisted by the Standard Automobile Co., the Cleveland agent for Packard motor cars and trucks. The gun fired 3-pound shots at the rate of 100 per minute, the range being 3½ miles. Shots were tried with the brakes of the car set and also released. When the brakes were set the truck did not move and no shock was felt by those surrounding the gun on the truck platform. With the brakes released there was a slight movement on the recoil, but no shock. The

designer of the gun recommends its use on a truck such as the Packard, but armored for war purposes.

Work On Speedway Progressing—Efforts are being made to complete the Indianapolis motor speedway by August 1, the work of surfacing both the inner and outer courses being under way. Both courses are being surfaced with taroid at a cost of about \$40,000 and when complete the track will be literally a solid rock track. The first events on the track will be motor cycle races August 13 and 14 during the meet of the American Federation of Motor Cyclists with the first motor car races August 19, 20 and 21.

Will Oil Country Roads—There will be no more dusty rock roads in Wyandotte county, Kansas, as the county board has practically agreed to expend the sum of \$3,200 oiling the roads. For the past 8 years the 5 to 8 miles of main public roads in the county have been macadamized annually by an expenditure each year of \$25,000 to \$45,000 out of a fund raised by a special tax levy, but little has been done to maintain the improved roads. The board will continue to build additional macadam roads and at the same time will keep those already constructed in repair.

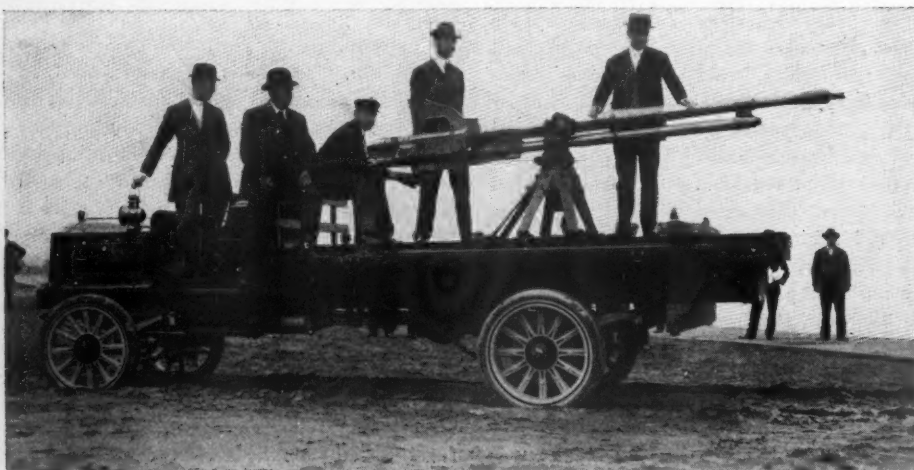
Water for Motorists—The spirit of toleration for motorists is growing larger every day and examples are cropping out in many places giving evidence of the good will of the people for those who tour in motor cars. This is especially true of Massachusetts. Middleboro began it with its banners asking a square deal and promising one in return. Now comes Concord, Mass., going Middleboro one better by voluntarily arranging a place where motor cars could secure water. This is absolutely new and original, for to make it easier for the tourists a long hose has been attached to a hydrant, and a sign

erected showing where the water may be had. The sign is a good-sized one and as the hydrant and hose are in the center of the town it is easily located, and motorists may fill their radiators and tanks without trouble. It has been in operation now some weeks and it is much appreciated.

Punishes a Road Hog—H. S. Kauffman, of the Volcano Spark Plug Co., of Ashland, O., recently made an example of a road hog who refused to give half the road and who waved a revolver at the motorist. Mr. Kauffman followed the fellow, learned who he was and then had him arrested. After giving him a scare, Mr. Kauffman dropped the case upon the prisoner agreeing to pay costs and behave himself in the future.

A Toll Road Victory—What is believed to be the last toll road in Indiana is about to become a free turnpike, a petition having been filed with the board of county commissioners at New Albany asking that appraisers be appointed and the road purchased by the county. In 1835 the legislature authorized a road 104 miles long which cost approximately \$15,000 a mile and was operated by the state until about 1851. Of this road 14 miles was in the county in which New Albany is located and which is the only remaining section still under toll. Since 1851 the road has been operated under private ownership.

Cowboy Is Converted—The cowboy of the west and southwest is laying aside his spurs and quirt, for the reason that the mustang with which he used to spend days in the saddle is being replaced by the motor car. So proficient has he become in the handling of the new steed that with it he has been able to run down and rope a steer in 24½ seconds, a record recently made in a cowboy contest in Texas. This was at John Tankersley's ranch, about 12 miles from San Angelo. The feat was performed with a 28-horsepower Franklin touring car. Each using this, D. A. Moss had as his competitors John Tankersley and Frank Tankersley. Constable Hawley Allen, of San Angelo, was the official timer and referee, enforcing the same rules as govern contests in the roping of steers from horseback. The steer was given a 50-foot start of the car and had to be roped and three legs tied, whereupon the competing cowboy would throw up his hands as a signal that the feat was completed. The time was then taken and the prostrate animal inspected to make sure that the tying was perfect. Moss in making the record drove the motor car toward the animal which he proposed to lasso until he was within throwing distance, stopped the car and applied the brake so as to brace the car



LARGEST AUTOMATIC GUN IN WORLD ON PACKARD TRUCK

against the straining of the steer and then make the throw. The rope fell true; the startled steer was thrown to the ground, and in an instant Moss was by its side, completing the tying in 24½ seconds.

Prefer Roads to Courthouse—The demand for good roads and bridges in La Flore county, Oklahoma, is so urgent that it has been decided by the county officials to appropriate money from the treasury for the purpose in preference to a new county courthouse. Both improvements have been sought by partisans of both factions, those in favor of good roads winning out. An issue of bonds amounting to \$157,000 will be made within 60 days, and later amounts aggregating a million dollars for the purpose will be expended.

Prizes For Mitchells—Mitchell cars carried off the honors in the big parade that marked the homecoming celebration at Racine, Wis., on Monday and Tuesday of last week. There were seventy cars in the floral parade and first prize was awarded to Mrs. M. L. Fixen, sister of W. M. Lewis, president of the Mitchell company. H. E. Redmond, vice-president of the Mitchell company, won second and Sales Manager J. W. Gilson third prize. Of course all three cars were Mitchells. Other prize winners who drove Mitchells were William T. Lewis, Mayor Horlick and J. B. Rohan. Lewis field a 40-acre lot, donated to the city by W. M. Lewis, was dedicated.

New Road Material—A practicable and inexpensive substance and material for the construction of roads has been discovered in the southwestern Wisconsin lead and zinc fields, where immense quantities of tailings, the residue of mills for grinding ore, have been used as a substitute for crushed stone for macadamizing roads and found to be even superior to the material now commonly used. The discovery has interested Governor John A. Johnson, of Minnesota, who visited the Wisconsin fields recently and investigated. At one mine alone there are 80,000 tons of tailings which are given free for the hauling, and business men of the cities in the mining districts have adopted Governor Johnson's



WATER FOR THE MOTOR CAR

suggestions and are already spreading them over the roads, then packed by means of steam rollers. The tailings include limestone, which obviates the need of any sort of binder for the top dressing.

Thomas Employees' Picnic—Upward of 1,000 employees of the E. R. Thomas Motor Co., of Buffalo, attended an outing at Cascade park last Saturday. They saw running races of all sorts, a game of association football and danced. There was an exciting game of baseball between the non-machine operators and the machine operators, the latter winning by a score of 8 to 6.

Blow For Joy-Riders—The day of using municipal motor cars owned by the city for joy rides is soon to be a thing of the past in Boston. A few days ago Alderman Frederick Brand introduced an order in the board requesting that all motor cars owned by the city be painted a distinct color, and that the initials of the department, together with the words "City of Boston" be

put on the cars. It was passed and went to Mayor Hibbard, but he has not acted on it yet. However, the newly-appointed finance commission has now taken up the matter and there is to be an investigation of the use of motor cars by city employees. There have been instances where cars have been damaged while out at night when they should have been in a garage, and the expense of repairing the machines was charged up to the city.

Fisher a Samaritan—Carl G. Fisher, of the Fisher Automobile Co., Prest-O-Lite Co. and Indianapolis Motor Speedway Co., at Indianapolis, has donated the use of his farm near that city for the summer to the Salvation Army. The farm consists of 80 acres and has an eight-room house. It is the intention of the Salvation Army to take thirty mothers and their children to the farm each week until September and tents will supplement the house in furnishing sleeping quarters.

Shawnee a Record-Breaker—Shawnee, Okla., is claiming the honor of not only being the youngest city in the United States, but that it has more motor cars than any city of its size in the country. Last summer the first paved street in the town was opened for traffic, over which not more than a half dozen cars traveled. Since that time 14 miles of asphalt paving has been completed, and contracts let for 6 more miles of paving, making a total of 21 miles of improved streets. The total number of cars owned is twenty-one, or a motor car for every mile of paved street.

Farmer Makes Money—Two miles east of Laramie, Wyo., on Dale creek, on a highway used considerably by motorists, an old German farmer has been collecting tolls of 50 cents for drivers passing through his place. Owing to the fact that the main traveled roads have been made impassable by heavy rains, and the large number of tourists traveling in both directions, the old man has been reaping a rich harvest. It is not unlikely that the Laramie Automobile Club will undertake prosecution as soon as necessary evidence can be gathered.



COWBOY ROPES STEER FROM MOTOR CAR IN 24½ SECONDS



Among the Makers and Dealers



Yoder Retires—William B. Yoder, manager of the White branch in Pittsburg, has resigned and will be succeeded by W. H. Moore. Mr. Yoder has been identified with the motor industry in Pittsburg almost since it started.

Pray Takes Studebaker Line—A. J. Pray of Columbus, O., has taken the local agency for the Studebaker. A new garage is now in course of construction at 254-266 North Fourth street, which will be completed about August 15. At that time a full line of Studebakers, both gasoline and electric, will be installed.

Monarch In Bankruptcy Court—The Monarch Motor Car Co., of Chicago Heights, was thrown into involuntary bankruptcy last Friday by creditors, who sought to appoint a receiver. The American Trust and Savings bank was appointed, with a bond of \$15,000, by Judge Wright, in the United States district court. The liabilities are said to be \$50,000, while the assets are half as much.

Will Stay In Milwaukee—Articles of incorporation have been filed by the Meiselbach Mfg. Co. of Milwaukee, Wis., with a capital stock of \$50,000. The incorporators are A. D. Meiselbach, S. Wallheim and L. W. Clough. The incorporation of the Meiselbach company is considered to mean that the Meiselbach motor and truck works at North Milwaukee, Wis., will remain. A. D. Meiselbach had interested \$30,000 of capital at Sparta, Monroe county, Wis., as a bonus for moving the plant to that city, but the Sparta business men decided not to go into the matter at this time because of business conditions. The same offer was made, it is said to business men of Kilbourn, Wis., but the company has finally been induced to remain at Milwaukee. The incorporation with backing of the Meiselbach interests into the truck manufacturing field, and the product will

include light delivery and commercial vehicles of all kinds. Up to this time the company has built trucks and vehicles in limited quantities, and mostly for home trade.

Enlarges Spring Factory—The Cleveland Canton Spring Co. of Canton, O., is now occupying the large addition to its fact building, which has recently been completed. The erection of this building became necessary on account of its rapidly expanding spring business. To carry out its ideas in regard to the manufacture of motor car springs, the company has gone to a heavy expense in erecting special gas-heated kilns which can be kept at a uniform temperature at all times and in which the steel bars never come in direct contact with the flame. It has also recently installed a most ingenious piece of machinery which indicates the temperature in any kiln at any time. In addition to the kilns it has invented a process of oil baths kept at certain temperatures to assist in the tempering. Perhaps the most interesting operations in its factory are the series of tests to which a spring is subjected, started with the steel bars when unloaded from the cars and carried through every step until the finished spring is ready for shipment. The first test is a chemical analysis of the steel bars showing whether they come up to the required specifications. Next is the crystallization test which occurs after the steel has been tempered to demonstrate its resistance to vibration. After this the spring is bent past center to ascertain its strength and whether it takes a permanent set. The next step is testing the spring for its mechanical construction to assure true alignment of plates and eyes so the spring may hang properly under the car. The final test is on a scale testing machine of \$50,000 will mean the active entrance to insure the required carrying capacity;

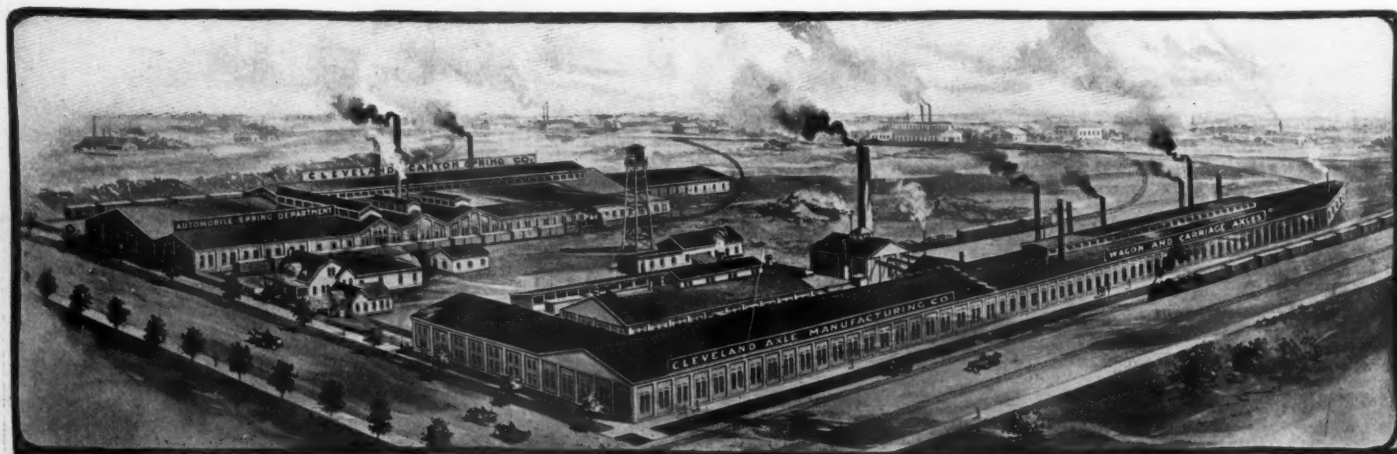
they are then ground and polished after which each spring is subjected to a thorough inspection before shipment. In addition to these tests all patterns are tested on a surface plate with a try square and a set of parallels to insure a true spring before they are used.

Packard In Toledo—Arrangements have been made whereby a Packard agency will be opened in Toledo in the near future. The business will be in charge of William Love, formerly with Kirk Brothers of Toledo. The company has not been heretofore represented in this territory.

Adds to Glide Plant—The factory building formerly occupied by the St. Louis Motor Car Co. at Peoria, Ill., has been bought by the Bartholomew Co., which will run it in connection with the present one. This acquisition doubles the capacity of the Bartholomew Co. and will enable it to take care of its increased output for 1910.

Change at Omaha—F. C. Johnson, formerly secretary of the local Central Tire and Rubber Co. of Omaha, Neb., has resigned and taken a position with C. F. Louk, agent for the Maxwell, where he becomes office manager. Mr. Johnson, who was relieved by N. J. Marvin, still retains his interest in the Central Tire and Rubber Co.

Chicago Row Changes—Announcement is made that two more Chicago concerns have decided to locate in the southern end of the motor colony. James E. Plew, retailer of the White, has leased property 125 by 190 feet at Wabash avenue and Twenty-seventh street—2633 to 2709—and will erect thereon a six-story fireproof building that will cost from \$160,000 to \$170,000. The McDuffee Automobile Co., agent for the Stoddard-Dayton, has decided to rent a building to cost \$100,000 to be erected at the northeast corner of



PLANT OF CLEVELAND CANTON SPRING CO., OF CANTON, O., WHERE MOTOR CAR SPRINGS ARE MADE



THOMPSON BROTHERS GARAGE AT SALISBURY, N. C.

Michigan avenue and Twenty-fifth street. The lease is for a term of 15 years. The building will be four stories high, will occupy a site 75 by 161 feet, and will be completed about November 1.

New Elkhart Enterprise—It has just been announced that Elkhart, Ind., is to have another motor car factory. The new company, which will be financed largely by Elkhart business men, has leased a factory building of H. E. Bucklen and expects to begin business at once.

Wood Emergency Tire—Plans have been perfected at Laporte, Ind., and the necessary capital subscribed for the establishing of a factory for the manufacture of an emergency tire for motor cars. The tire is a device so constructed of wood or other suitable material that it can be adjusted to any wheel in the place of the regular tire in a few minutes, and when not in use is stored away in a few inches of space.

Toledo Garage Growing—The Twenty-first street garage at Toledo, will make improvements soon which will greatly add to the capacity of the business, already one of the largest in the city. A large addition will be erected giving double the room. One side of the building will be devoted exclusively to the handling of electrics, while the other will be used for other cars. L. L. Blood is the present manager of the concern.

Another Defeat For Horse—One of the largest transfer and livery lines has passed out of existence to make room for a large garage in Indianapolis, which has taken the building occupied for many years by the Indianapolis Transfer Co. Members of the motor concern, which is known as the Delaware garage, are John E. Morand, former president of the Indianapolis Transfer Co.; Paul R. John, Cecil E. Gibson of the Gibson Automobile Co., and C. R. Newby, formerly agent for the Olds and more recently identified with the State Automobile Co. Later the new company

will handle a line of cars, but for the present will devote its attention to garage work and selling second-hand cars.

Miller Goes West—Henry F. Miller, formerly associated with the Studebaker New York agency, has joined the forces of the same company in Kansas City. He will have charge of the electric and commercial part of the business.

Making the Stafford—Eight Staffords are under construction at Topeka, Kas., under the supervision of Terry Stafford, who plans to begin the manufacture of cars on a larger scale. He has a garage at Seventh and Quincy streets and expects to manufacture but one model for the present.

Now a Maxwell Branch—The most important trade happening in Philadelphia last week was the transfer of the Maxwell representation from the Longstreth Motor Car Co. to the Maxwell-Briscoe Motor Co. In other words the Maxwell's business in the Quaker City and adjacent territory will hereafter be carried on through a branch house. William F. Smith, the general manager in that particular district,

will have charge of the new branch, and will handle the wholesale as well as the retail business. The Maxwell quarters at 207-209 North Broad street will be retained.

Charter Granted—The Battery Light and Power Co. of Milwaukee, Wis., has filed articles of incorporation and granted a charter. The capital stock is \$25,000 and the incorporators of the concern are Oscar Werwath, William F. Borges and William A. Schroeder.

Pelletier's New Titles—E. Leroy Pelletier, announcement is made, now is assistant sales manager of the Studebaker Automobile Co., which will market the motor cars manufactured by the Studebaker interests and also advertising manager of the Studebaker Brothers Co., of South Bend, which also includes the carriage business. Mr. Pelletier will make his home and headquarters in South Bend.

Vanguard Company Expands—The Vanguard Mfg. Co. of Joliet, Ill., will shortly move into a new home of its own. The company has purchased a tract of land adjacent to two railroad lines at Joliet and is erecting a brick and concrete factory building, 60 by 250. A brass foundry will be added to the various departments now in operation. The 1910 line of wind shields, bumpers, spark plugs, etc., will include a new brass frame wind shield called the Breech-Loek.

Memorial to Captain Lomb—In the presence of 1,800 employees of the Bausch & Lomb Optical Co., of Rochester, N. Y., the first bronze and marble memorial ever erected in Rochester by employees to a deceased employer was unveiled in the factory of the Bausch & Lomb company on July 8. The bronze is a tablet resting on a beautifully polished Ionic column or pedestal of Sienna marble. The bronze tablet is attached to a scroll capital of the column. The testimonial is in memory of Captain Henry Lomb, who jointly with John J. Bausch, founded more than 50 years ago, the Bausch & Lomb Optical Co.



RIVERVIEW GARAGE, MILWAUKEE, WHICH HANDLES THE MOON IN CREAM CITY



Brief Business Announcements



Waukesha, Wis.—The Waukesha Motor Co. is erecting a considerable addition to its present plant.

Harrisburg, Pa.—The Auto Trading Co., of Pittsburg, has been incorporated with a capital stock of \$10,000.

Frankfort, Ky.—A charter has been granted to the Louisville Automobile Co. which has a capital stock of \$5,000.

Seattle, Wash.—The Firestone Tire and Rubber Co. is to open a branch at 918 East Pike street, under the management of E. L. Champion.

South Bend, Ind.—The Simplex Motor Car Co., of Mishawaka, has filed articles giving notice of an increase of the capital, which in the future is to be \$400,000.

Birmingham, Ala.—A taxicab service is to be installed in this city. C. H. Nabb, who is to be the president of the company, has located an office in the lobby of the Hotel Hillman. Four cars are to be put in service.

Albany, N. Y.—The Gillis-Strickland Motor Co., of Rochester, has been incorporated with a capital stock of \$25,000, to engage in the manufacture of motor cars, boats, etc. The incorporators are J. W. Gillis and S. M. Havens.

Boston, Mass.—The Taxi-Cab Co., of Boston, has been incorporated with a capital stock of \$250,000, and will do a general cab and trucking business. R. F. Guild is to be the president and F. H. Nesmithe, treasurer of the company.

Trenton, N. J.—The Bongartz Motor Co., of Jersey City, has been incorporated with a capital stock of \$50,000, and is to manufacture, lease and rent motor car locks and other motor appliances. The incorporators are B. Bongartz, E. Tietz and C. C. Kelly.

New York.—The Mercedes Realty Co., of New York city, has been incorporated with a capital stock of \$10,000, and is to manufacture motor cars, motors, engines. The incorporators are A. C. Beckert, H. Hitchenback and W. Luttgen.

Boston, Mass.—Articles of incorporation have been filed by the Hub Automobile and Renting Co., of this city, with a capital stock of \$10,000, to engage in a general motor car business. The office of president is to be filled by H. B. Josselyn, while J. H. Josselyn is to act as treasurer.

Trenton, N. J.—A change has been made in the management of the Swift Taxicab Co. In the future the concern is to be known as the Trenton Taxicab Co. Nicholas Snyder, who has been president of the company since its organization, is to continue in this capacity, while the post of manager is to be filled by Joseph Buch.

David Swift, the original backer of the enterprise, is to retire from the business altogether.

New York.—The American Taximeter Cab Co. has filed a petition in bankruptcy, with liabilities of \$5,047 and assets of \$5,003.

Lansing, Mich.—The Northway Motor and Mfg. Co., of Detroit, has announced an increase of its capital stock from \$100,000 to \$250,000.

New York.—George C. Van Veen is once more identified with the Columbia interests, having become affiliated with the Vulcan Storage Co., agent for the Columbia.

Dover, Del.—The Berks Auto Traffic Co. has been incorporated with a capital stock of \$10,000. Charles J. Becker, William L. Diener and James M. Endy, all of Reading, Pa., are named as the incorporators.

Rochester, N. Y.—The Selden Motor Vehicle Co. has purchased from Anna Gould 4 acres of property on Probert street, between the New York Central and the Rochester, Syracuse and Eastern tracks. Ground is to be broken for the new buildings within a few weeks.

Albany, N. Y.—The All-Bright Auto Co., of New York city, has filed articles of incorporation with a capital stock of \$5,000. It will manufacture cars, wagons, boats, engines, etc. The incorporators are R. J. and V. R. Welch and Fred Edwards. Another new concern is the Barber Auto-Cab and Repair Co., of Brooklyn, which has a

capital stock of \$15,000. The incorporators are A. S. and William Barber and R. A. Rendich.

Augusta, Me.—The Eastern Motor Car Co., of Portland, has been incorporated to do a general motor car business.

Chicago.—The Levy & Hipple Motor Co., which is now acting as agent for the Chalmers-Detroit and the Lozier cars, has taken on the Hudson.

Pittsburg, Pa.—The Auto Trading Co., Inc., has opened a garage on Euclid avenue, and is to make a specialty of buying and dealing in second-hand cars.

Pittsburg Pa.—Application is shortly to be made for a charter for the Pittsburg Auto Lamp Repair Co., which is to engage in the manufacture and repairing of self-propelled vehicles, and also supplies and accessories of all kinds.

Albany, N. Y.—A new company has filed articles of incorporation under the name of J. Kromer's Sons of Brooklyn. The concern has a capital stock of \$3,000 and is to deal in vehicles, motor cars, etc. The incorporators are John, William, Edward and George Kromer, all of Brooklyn.

Long Island City, N. Y.—Plans have been filed with the building department for the erection of the new plant for Palmer & Singer, which is to be built on the south side of Webster avenue, between Second and Third avenues. It is to be a three-story brick structure, semi-fireproof, and is to cost \$100,000.

Trenton, N. J.—A new concern to file articles of incorporation is the Auto Car Service Co., of New Jersey, registering from Camden. This company has a capital stock of \$10,000, and is to manufacture and deal in motor cars and other vehicles, as well as conduct a public garage. E. A. Fitts, D. S. Ludlum, and J. O. Clark are named as the incorporators.

Brooklyn, N. Y.—Charles A. Carlson, who is the president of the Carlson Automobile Co., is now busily engaged at his new plant at 1011 Diamond street, Philadelphia, where the first 100 Carlson motor trucks are to be made. H. H. Creighton, manager of the Long Island Automobile Club, has been elected secretary and general manager of the new company.

San Antonio, Tex.—Two new garages are to be erected in this city, both on East Houston street. One is to be at the corner of East Houston and Nacogdoches streets, and is owned by T. L. Conroy, H. B. Rice and James Byrne. The other will be located on East Houston, just east of the Schmeltzen building, and is to be of brick and concrete, and will have 5,000 square feet or space.



Oklahoma City, Okla.—Southwestern Automobile Supply Co., capital stock \$10,000. Incorporators, W. G. Brown and T. B. Funk, of Dallas, Tex., and O. G. Watson, of Oklahoma City, Okla. The concern is to operate in Texas, and will make its headquarters at Dallas.

Buffalo, N. Y.—Queen City Auto Livery Co., capital stock \$25,000; to conduct a motor livery. Incorporators, C. V. Riley, H. C. Shufelt and W. J. Hickey.

Camden, N. J.—Regal Tire and Rubber Co., capital stock \$250,000; to manufacture and deal in vehicle tires. Incorporators, W. H. Wilson, Stewart Morray, and F. A. Kuntz.

Jersey City, N. J.—Mechanical Tire Co., capital stock \$500,000; to manufacture rubber tires and other rubber goods. Incorporators, H. O. Coughlan, S. A. Anderson, G. B. Leggett.

Detroit, Mich.—Welch Co., capital stock \$250,000. Incorporators, Arthur Pack and A. V. Welch, of Pontiac, and Fred T. Moran, of Detroit.

New York.—Keeton Securities Co., capital stock \$2,000; to engage in the manufacture of motor vehicles and equipment. Incorporators, J. P. Callender, J. E. Peters, and L. L. Robbins.

Detroit, Mich.—Oldberg Mfg. Co., capital stock \$10,000, to manufacture mufflers and their accessories. Incorporators, V. Oldberg, H. P. Wayman and A. C. Born.